SONY-10465

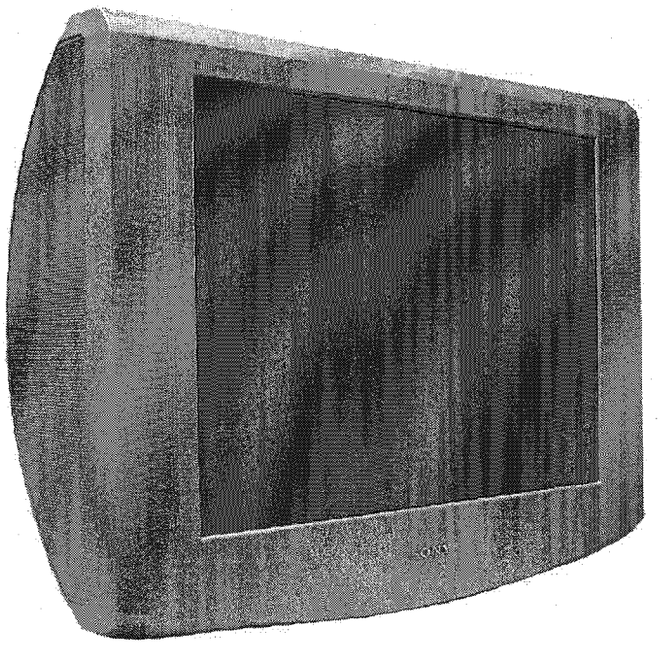
Self Diagnosis Supported model

SERVICE MANUAL

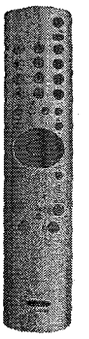
FE-2 CHASSIS

MODEL	COMMANDER	DEST	CHASSIS NO.	MODEL	COMMANDER	DEST	CHASSIS NO.
KV-29LS40B	RM-947	FR	SCC-Q54V-A	KV-29LS40K	RM-947	OIRT	SCC-Q51S-A
KV-29LS40E	RM-947	ESP	SCC-Q53W-A				

FD Trinitron



KV-29LS40



RM-947

TRINITRON ® COLOR TV

SONY®

TABLE OF CONTENTS

Section	Title	Page
	Specifications	3
	Connectors	4
	Self Diagnostic Software	5
1. GENERAL		
	Switching On the TV and Automatically Tuning	6
	Introducing and Using the Menu System	7
	Teletext	9
	Fastext	9
	Connecting Optional Equipment	9
	Using Optional Equipment	10
	Lifting the TV Set	10
	Specifications	11
	Troubleshooting	11
2. DISASSEMBLY		
2-1.	Rear Cover Removal	12
2-2.	Chassis Removal & Refitting	12
2-3.	A Board PWB Removal 1	13
2-4.	A Board PWB Removal 2	13
2-5.	Service Position	13
2-6.	Side Control Module Removal	13
2-7.	Picture Tube Removal	14
3. SET-UP ADJUSTMENTS		
3-1.	Beam Landing	15
3-2.	Convergence	16
3-3.	Focus Adjustment	18
3-4.	Screen (G2), White Balance	18
4. CIRCUIT ADJUSTMENTS		
4-1.	Electrical Adjustments	19
4-2.	Test Mode 1	21
4-3.	Test Mode 2	21
5. DIAGRAMS		
5-1.	Block Diagrams (1)	22
	Block Diagrams (2)	23
5-2.	Circuit Board Location	23
5-3.	Schematic Diagrams and Printed Wiring Boards	23
	* A Board Schematic	24
	* A Board PWB	28
	* C Board Schematic	29
	* C Board PWB	30
	* H2 Board Schematic	31
	* H2 Board PWB	30
	* F2 Board Schematic	31
	* F2 Board PWB	30
	* VM Board Schematic	31
	* VM Board PWB	30
5-4.	Semiconductors	32
5-5.	IC Blocks	34
6. EXPLODED VIEWS		
6-1.	Chassis	35
6-2.	Picture Tube	36
7. ELECTRICAL PARTS LIST		37

CAUTION

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR THE CARBON PAINTED ON THE CRT, AFTER REMOVAL OF THE ANODE CAP.

WARNING !!

AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE WORK TO AVOID POSSIBLE SHOCK HAZARD DUE TO LIVE CHASSIS, THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE POWER LINE.

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARKED ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL FOR SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION

APRES AVOIR DECONNECTE LE CAP DE'LANODE, COURT-CIRCUITER L'ANODE DU TUBE CATHODIQUE ET CELUI DE L'ANODE DU CAP AU CHASSIS METALLIQUE DE L'APPAREIL, OU AU COUCHE DE CARBONE PEINTE SUR LE TUBE CATHODIQUE OU AU BLINDAGE DU TUBE CATHODIQUE.

ATTENTION !!

AFIN D'EVITER TOUT RISQUE D'ELECTROCUTION PROVENANT D'UN CHÁSSIS SOUS TENTION, UN TRANSFORMATEUR D'ISOLEMENT DOIT ETRE UTILISÈ LORS DE TOUT DÈPANNAGE LE CHÁSSIS DE CE RÈCEPTEUR EST DIRECTMENT RACCORDÈ Á L'ALIMENTATION SECTEUR.

ATTENTION AUX COMPOSANTS RELATIFS Á LA SECURITÈ!!

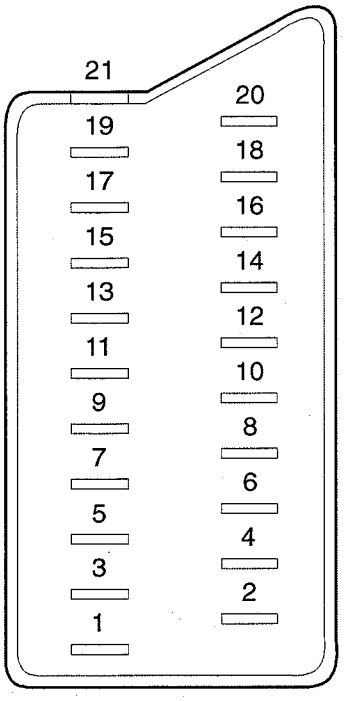
LES COMPOSANTS IDENTIFIÈS PAR UNE TRAME ET PAR UNE MARQUE ⚠ SUR LES SCHÈMAS DE PRINCIPE, LES VUES EXPLOSÈES ET LES LISTES DE PIECES SONT D'UNE IMPORTANCE CRITIQUE POUR LA SÈCURITÈ DU FONCTIONNEMENT, NE LES REMPLACER QUE PAR DES COMPSANTS SONY DONT LE NUMÈRO DE PIÈCE EST INDIQUÈ DANS LE PRÈSENT MANUEL OU DANS DES SUPPLÈMENTS PUBLIÈS PAR SONY.

ITEM MODEL	Television System	Stereo System	Channel Coverage	Color System
B	B/G/H, D/K, I, L	GERMAN/NICAM Stereo	VHF : E2-E12, R1-R12, S01-S03, F02-F10, B-Q UHF : E21-E69, F21-F69, B21-B69, R21-R69 CABLE TV : S01-S20 HYPER : S21-S41	PAL, SECAM NTSC4.43, NTSC3.58 (VIDEO IN)
E	B/G/H, D/K	GERMAN/NICAM Stereo	VHF : E2-E12, R1-R12, S01-S03, UHF : E21-E69, R21-R69 CABLE TV : S01-S20 HYPER : S21-S41	PAL, SECAM NTSC4.43, NTSC3.58 (VIDEO IN)
K	B/G/H, D/K	GERMAN/NICAM Stereo	VHF : E2-E12, R1-R12, S01-S03, UHF : E21-E69, R21-R69 CABLE TV : S01-S20 HYPER : S21-S41	PAL, SECAM NTSC4.43, NTSC3.58 (VIDEO IN)

Picture Tube	Flat Display FD Trinitron Approx 73 cm (29 inches) 104 degree deflection	**Sound output**	
		Right and Left speaker	2x14W (Music Power) 2x7W (RMS)
Input/Output Terminals [REAR]		**General Specifications**	
1: 21-pin Euro connector (CENELEC standard)	Inputs for Audio and Video signals. Inputs for RGB. Outputs of TV Video and Audio signals.	Power Requirements	220 - 240V
		Power Consumption	94W
2: 21-pin Euro connector	Inputs for Audio and Video signals. Inputs for S Video. Outputs of TV Video and Audio signals. (selectable), Smartlink Interface	Dimensions	Approx 771x592x553mm
		Weight	Approx 49kg
Phono Jacks	Output Connectors variable for Audio Signals	Supplied Accessories	RM-947 Remote Commander (1) IEC designated R6 battery (2)
Input/Output Terminals [SIDE]		Other Features	Teletext, Fastext, TOPtext, Sleep Timer, Smartlink, Dolby Virtual
Headphone jack	stereo mini jack	**Remote Control System : Infrared Control**	
Audio inputs	phono jacks	Power requirements	3V dc 2 batteries IEC designation R6 (size AA)
Video inputs	phono jacks		
S Video input	4 pin DIN		
Design and specifications are subject to change without notice.			

Model Name Item	KV-29LS40B	KV-29LS40E	KV-29LS40K
Pal Comb	OFF	OFF	OFF
PIP	OFF	OFF	OFF
RGB Priority	ON	ON	ON
Woofer Box	OFF	OFF	OFF
Scart 1	ON	ON	ON
Scart 2	ON	ON	ON
Front in (3)	ON	ON	ON
Scart 4	OFF	OFF	OFF
Projector	OFF	OFF	OFF
Norm B/G	ON	ON	ON
Norm I	ON	OFF	OFF
Norm D/K	ON	ON	ON
Norm AUS	OFF	OFF	OFF
Norm L	ON	OFF	OFF
Norm SAT	OFF	OFF	OFF
Norm M	OFF	OFF	OFF
Teletext	ON	ON	ON
Nicam Stereo	ON	ON	ON

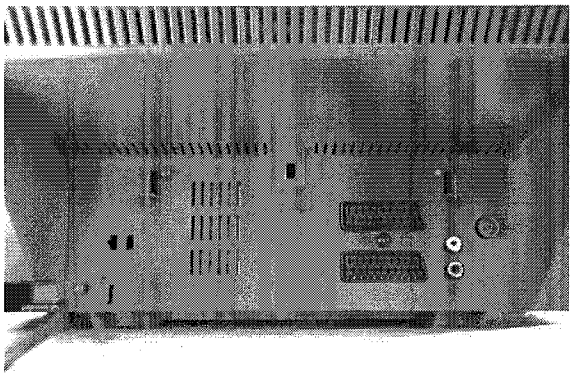
21 pin connector



Pin No	1	2	4	Signal	Signal level
1	○	○	○	Audio output B (right)	Standard level : 0.5V rms Output impedence : Less than 1kohm*
2	○	○	○	Audio output B (right)	Standard level : 0.5V rms Output impedence : More than 10kohm*
3	○	○	○	Audio output A (left)	Standard level : 0.5V rms Output impedence : Less than 1kohm*
4	○	○	○	Ground (audio)	
5	○	○	○	Ground (blue)	
6	○	○	○	Audio input A (left)	Standard level : 0.5V rms Output impedence : More than 10kohm*
7	○	●	●	Blue input	0.7 +/- 3dB, 75 ohms positive
8	○	○	○	Function select (AV control)	High state (9.5-12V) : Part mode Low state (0-2V) : TV mode Input impedence : More than 10K ohms Input capacitance : Less than 2nF
9	○	○	○	Ground (green)	
10	○	○	○	Open	
11	○	●	●	Green	Green signal : 0.7 +/- 3dB, 75 ohms, positive
12	○	○	○	Open	
13	○	○	○	Ground (red)	
14	○	○	○	Ground (blanking)	
15	○	–	–	Red input	0.7 +/- 3dB, 75 ohms, positive
	–	○	○	(S signal Chroma input)	0.3 +/- 3dB, 75 ohms, positive
16	○	●	●	Blanking input (Ys signal)	High state (1-3V) Low state (0-0.4V) Input impedence : 75 ohms
17	○	○	○	Ground (video output)	
18	○	○	○	Ground (video input)	
19	○	○	○	Video output	1V +/- 3dB, 75ohms, positive sync 0.3V (-3+10dB)
20	○	–	–	Video input	1V +/- 3dB, 75ohms, positive sync 0.3V (-3+10dB)
	–	○	○	Video input Y (S signal)	1V +/- 3dB, 75ohms, positive sync 0.3V (-3+10dB)
21	○	○	○	Common ground (plug, shield)	

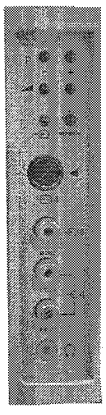
○ Connected ● Not Connected (open) * at 20Hz - 20kHz

Rear Connection Panel



Side Connection Panel

S-Video socket



S Video socket pin configuration		
Pin No	Signal	Signal Level
1	Ground	-
2	Ground	-
3	Y (S signal) input	1V+/- 3dB 75ohm, positive Sync. 0.3V -3 +10dB
4	C (S signal) input	0.3V+/- 3dB 75ohm, positive Sync.

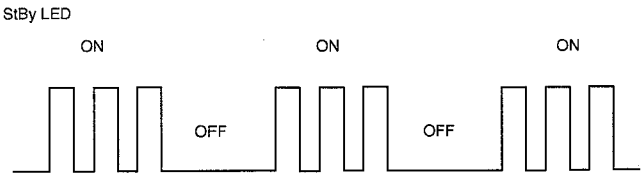
FE-2 SELF DIAGNOSTIC SOFTWARE

The identification of errors within the FE-2 chassis is triggered in one of two ways :- 1: Busy or 2: Device failure to respond to IIC. In the event of one of these situations arising the software will first try to release the bus if busy (Failure to do so will report with a continuous flashing LED) and then communicate with each device in turn to establish if a device is faulty. If a device is found to be faulty the relevant device number will be displayed through the LED (Series of flashes which must be counted) See table 1., non fatal errors are reported using this method. Each time the software detects an error it is stored within the NVM. See Table 2.

Table 1

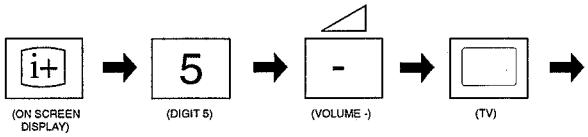
Error Message	LED Code
No error	00
Reserved	01
OCP (Over Current Protection)	02
Not Used	03
No Vertical Sync	04
IKR Error at power on	05
IIC bus clock and/or data lines low at power on	06
NVM no IIC bus acknowledge at power on	07
Not Used	08
Tuner no acknowledge at power on	09
Sound Processor Error	10
Jungle controller 8 volts error	11

Flash Timing Example : e.g. error number 3



How to enter into Table 2

1. Turn on the main power switch of the TV set and enter into the 'Standby Mode'.
2. Press the following sequence of buttons on the Remote Commander.



3. The following table will be displayed indicating the error count.

Table 2

ERROR MENU			
E02	OCP	(0, 255)	0
E03	OVP N/A	(0, 255)	0
E04	VSYNC	(0, 255)	0
E05	IKR	(0, 255)	0
E06	IIC	(0, 255)	0
E07	NVM	(0, 255)	0
E08	JUNGLE	(0, 255)	0
E09	TUNER	(0, 255)	0
E10	SOUNDP	(0, 255)	0
E11	8V	(0, 255)	0
WORKING TIME			
HOURS			2
MINUTES			11

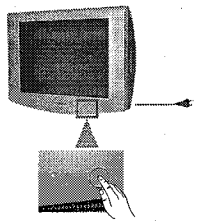
Note: To clear the error count data press '80' on the Remote commander.

The operating instructions mentioned here are partial abstracts from the 'Operating Instruction Manual'. The page numbers of the 'Operating Instruction Manual' remain as in the manual.

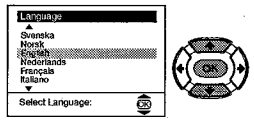
Switching On the TV and Automatically Tuning

The first time you switch on your TV, a sequence of menu screen appear on the TV enabling you to: 1) choose the language of the menu screen, 2) choose the country in which you wish to operate the TV, 3) adjust the picture slant 4) search and store all available channels (TV Broadcast) and 5) change the order in which the channels (TV Broadcast) appear on the screen.
However, if you need to change any of these settings, you can do that by selecting the appropriate option in the (Set Up menu) or by pressing the Auto Start Up Button on the TV set.

1 Connect the TV plug to the mains socket (220-240V AC, 50Hz)
Press the ⏻ on/off button on the TV set to turn on the TV.
The first time you press this button, a **Language** menu displays automatically on the TV screen.

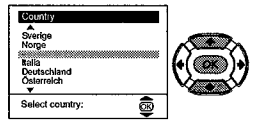


2 Press the ▼ or ▲ button on the remote control to select the language, then press the **OK** button to confirm your selection. From now on all the menus will appear in the selected language.



3 The **Country** menu appears automatically on the TV screen. Press the ▼ or ▲ button to select the country in which you will operate the TV set, then press the **OK** button to confirm your selection.

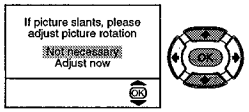
- If the country in which you want to use the TV set does not appear in the list, select "-" instead of a country.



4 Because of the earth's magnetism, the picture might slant. The **Picture Rotation** menu allows you to correct the picture slants if it is necessary.

a) If it is not necessary, press ▼ or ▲ to select **Not necessary** and press **OK**.

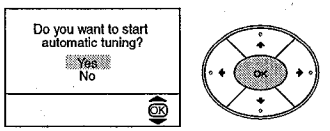
b) If it is necessary, press ▼ or ▲ to select **Adjust now**, then press **OK** and correct any slant of the picture between –5 and +5 by pressing ▼ or ▲ . Finally press **OK** to store.



continued...

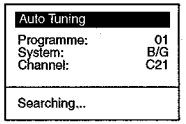
GB

5 The Auto Tuning menu appears on the screen. Press the **OK** button to select **Yes**.

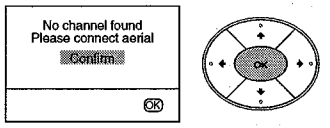


6 The TV starts to automatically search and store all available broadcast channels for you.

This procedure could take some minutes. Please be patient and do not press any buttons, otherwise the automatic tuning will not be completed.



If no channels were found during the auto tuning process then a new menu appears automatically on the screen asking you to connect the aerial. Please connect the aerial (see page 6) and press **OK**. The auto tuning process starts again.



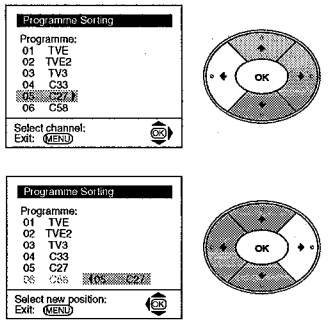
7 After all available channels are captured and stored, the **Programme Sorting** menu appears automatically on the screen enabling you to change the order in which the channels appear on the screen.

a) If you wish to keep the broadcast channels in their tuned order, go to step 8.

b) If you wish to store the channels in a different order:
1 Press the ▼ or ▲ button to select the programme number that has the channel (TV Broadcast) you wish to rearrange, then press the ► button.

2 Press the ▼ or ▲ button to select the new programme number position for your selected channel (TV Broadcast), then press ◄.

3 Repeat steps b)1 and b)2 if you wish to change the order of the other channels.



8 Press the **MENU** button to remove the menu from the screen.

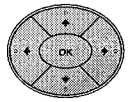
Your TV is now ready for use.

Introducing and Using the Menu System

Your TV uses an on-screen menu system to guide you through the operations. Use the following buttons on the Remote control to operate the menu system:

1 Press the **MENU** button to switch the first level menu on.

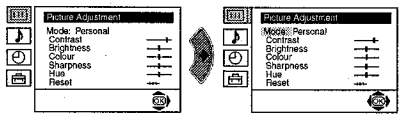
2
- To highlight the desired menu or option, press ↓ or ↑ button.
- To enter to the selected menu or option, press →.
- To return to the last menu or option, press ←.
- To alter the settings of your selected option, press ↓/↑/← or →.
- To confirm and store your selection, press the **OK** button.



3 Press the **MENU** button to remove the menu from the screen.

Menu Guide

Level 1 **Level 2** **Level 3 / Function**



PICTURE ADJUSTMENT

The "Picture Adjustment" menu allows you to alter the picture adjustments.

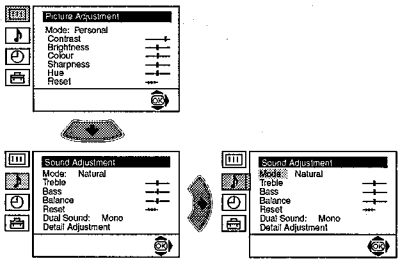
To do this: after selecting the item you want to alter press →, then press repeatedly ↓/↑/← or → to adjust it and finally press **OK** to store the new adjustments.

This menu also allows you to customise the picture mode based on the programme you are watching:
- ↓ **Personal** (for individual settings).
- ↓ **Live** (for live broadcast programmes, DVD and Digital Set Top Box receivers).
- ↓ **Movie** (for films).

- **Brightness, Colour** and **Sharpness** can only be altered if "Personal" mode is selected.
- **Hue** is only available for NTSC colour signal (e.g: USA video tapes).
- Select **Reset** and press the **OK** button to return the picture settings to their factory preset levels.

continued...

Level 1 **Level 2** **Level 3 / Function**



SOUND ADJUSTMENT

The "Sound Adjustment" menu allows you to alter the sound adjustments.

To do this: after selecting the item you want to alter press →, then press repeatedly ↓/↑/← or → to adjust it and finally press **OK** to store the new adjustments.

This menu also contains two submenus as following:

Mode →
- ↓ **Personal** (for individual settings)
- **Rock**
- **Pop**
- **Jazz**

Detail Adjustment →
- ↓ **Dolby* Virtual:**
  - ↓ **Off:** Normal.
  - ↓ **On:** Simulates the sound effect of Dolby Pro Logic surround.
- ↓ **Auto volume:**
  - ↓ **Off:** Volume level changes according to the broadcast signal.
  - ↓ **On:** Volume level of the channels will stay the same, independent of the broadcast signal (e.g. in the case of advertisements).
- ↓ **TV Speakers:**
  - ↓ **Off:** Sound from external amplifier connected to the audio outputs on the rear of the TV set.
  - ↓ **On:** Sound from the TV set.

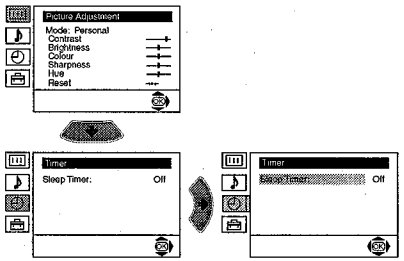
- **Treble** and **Bass** can only be altered if "Personal" mode is selected.
- Select **Reset** and press **OK** to reset the sound to the factory preset levels.
- In case of a bilingual broadcast select **Dual Sound** and set **A** for sound channel 1, **B** for sound channel 2 or **Mono** for mono channel if available. For a stereo broadcast you can choose **Stereo** or **Mono**.
- If you are listening to the TV through headphones "Dolby Virtual" option will automatically be switched to "Off".
- If you switch "Dolby Virtual" to "On", the "Auto Volume" option will automatically be switched to "Off" and vice versa.

* This TV has been designed to create the "Dolby Surround" sound effect by simulating the sound of four speakers with two speakers, when the broadcast audio signal is Dolby Surround encoded. The sound effect can also be improved by connecting a suitable external amplifier (for details refer to "Connecting to external audio Equipment" on page 18).

* Manufactured under license from Dolby Laboratories. "Dolby", "Pro Logic" and the double-D symbol ▯▯ are trademarks of Dolby Laboratories.

continued...

Level 1	Level 2	Level 3 / Function

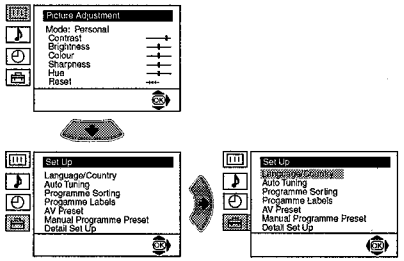


SLEEP TIMER

The "Sleep Timer" option in the "Timer" menu allows you to select a time period for the TV to switch itself automatically into the standby mode.

To do this: after selecting the option press ➔, then press ⬇ or ⬆ to set the time period delay (max. of 4 hours) and finally press **OK** to store.

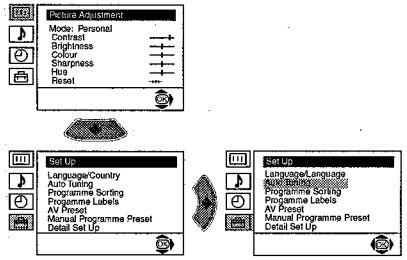
- While watching the TV, you can press the ⊕ button on the remote control to display the time remaining.
- One minute before the TV switches it self into standby mode, the time remaining is displayed on the TV screen automatically.



LANGUAGE / COUNTRY

The "Language / Country" option in the "Set Up" menu allows you to select the language that the menus are displayed in. It also allows you to select the country in which you wish to operate the TV set.

To do this: after selecting the option press ➔, and then proceed in the same way as in the steps 2 and 3 of the section "Switching On the TV and Automatically Tuning".



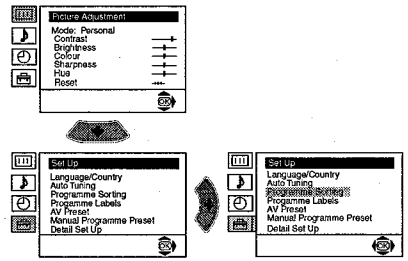
AUTO TUNING

The "Auto Tuning" option in the "Set Up" menu allows you to automatically search for and store all available TV channels.

To do this: after selecting the option press ➔, and then proceed in the same way as in the steps 5 and 6 of the section "Switching On the TV and Automatically Tuning".

continued...

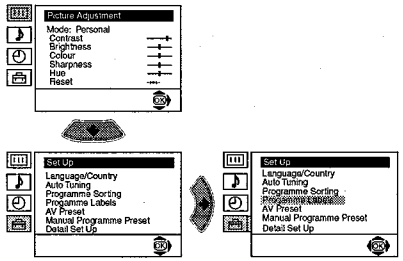
Level 1	Level 2	Level 3 / Function



PROGRAMME SORTING

The "Programme Sorting" option in the "Set Up" menu allows you to change the order in which the channels (TV Broadcast) appear on the screen.

To do this: after selecting the option press ➔, and then proceed in the same way as in step 7b) of the section "Switching On the TV and Automatically Tuning".

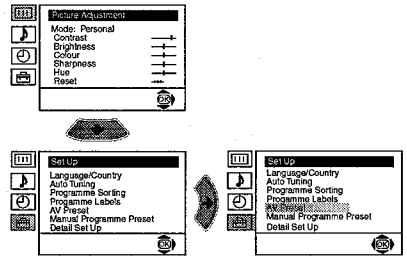


PROGRAMME LABELS

The "Programme Labels" option in the "Set Up" menu allows you to name a channel using up to five characters (letters or numbers).

To do this:

1 After selecting the option, press ➔, then press ⬇ or ⬆ to select the programme number with the channel that you wish to name.
2 Press ➔. With the first element of the **Label** column highlighted, press ⬇ or ⬆ to select a letter or number (select "-" for a blank), then press ➔ to confirm this character. Select the other four characters in the same way. Finally press **OK** to store.



AV PRESET

The "AV Preset" option in the "Set Up" menu allows you to designate a name to the external equipment you have connected to the sockets of this TV.

To do this:

1 After selecting the option, press ➔, then press ⬇ or ⬆ to select the input source that you wish to name (**AV1** and **AV2** are for the rear Scarts and **AV3** for side connectors). Then press ➔.
2 In the label column automatically appears a label:

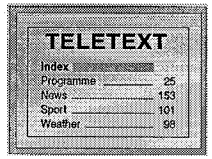
a) If you want to use one of the 6 predefined labels (**CABLE**, **GAME**, **CAM**, **DVD**, **VIDEO** or **SAT**), press ⬇ or ⬆ to select the desired label and finally press **OK** to store.
b) If you want to set a different label, select **Edit** and press ➔. Then with the first element highlighted, press ⬇ or ⬆ to select a letter, number or "-" for a blank, then press ➔ to confirm this character. Select the other four characters in the same way and finally press **OK** to store.

continued...

Teletext

Teletext is an information service transmitted by most TV stations. The index page of the teletext service (usually page 100) gives you information on how to use the service. To operate teletext, use the remote control buttons as indicated below.

Make sure that you use a channel (TV Broadcast) with a strong signal, otherwise teletext errors may occur.



To switch on Teletext:
After selecting the TV channel which carries the teletext service you wish to view, press ▤.

To select a Teletext page:
Input 3 digits for the page number, using the numbered buttons.
- If you make a mistake, retype the correct page number.
- If the counter on the screen continues searching, it is because the page is not available. If this is the case, input another page number.

To access the next or preceding page:
Press **PROG +** (▲) or **PROG -** (▼).

To superimpose teletext on to the TV:
Whilst you are viewing teletext, press ▤. Press it again to cancel teletext mode.

To freeze a teletext page:
Press ⏎/⊡. Press it again to cancel the freeze.

To reveal concealed information (e.g: answer to a quiz):
Press ⊞/?. Press it again to conceal the information.

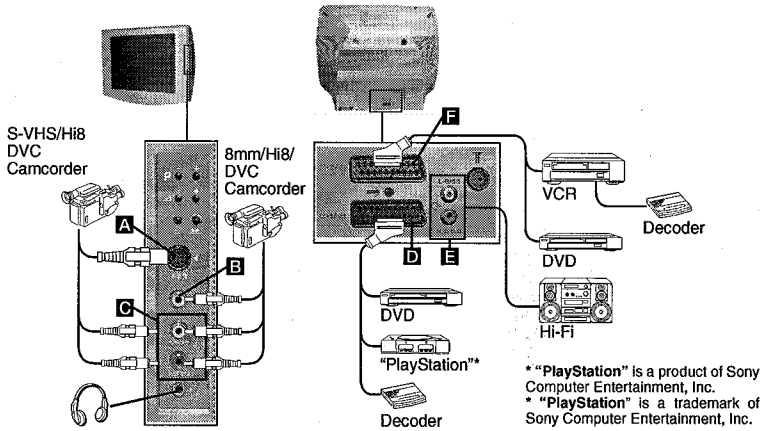
To Switch Off Teletext:
Press ▢.

Fastext

Fastext service lets you access Teletext pages with one button push.
When you are in Teletext mode and Fastext is broadcast, a colour coded menu appears at the bottom of the teletext page. Press the appropriate coloured button (red, green, yellow or blue) to access the page corresponding to your menu choice.

Connecting Optional Equipment

Using the following instructions you can connect a wide range of optional equipment to your TV set. (Connecting cables are not supplied).



When you connect the headphones, the TV speakers will automatically be muted.

* **"PlayStation"** is a product of Sony Computer Entertainment, Inc.
* **"PlayStation"** is a trademark of Sony Computer Entertainment, Inc.

To avoid picture distortion, do not connect external equipment to connectors **A** and **B** at the same time.

Connecting a VCR:

To connect a VCR, please refer to the section "Connecting the aerial and VCR" of this instruction manual. We recommend you connect your VCR using a scart lead. If you do not have a scart lead, tune in the VCR test signal to the TV programme number "0" by using the "Manual Programme Preset" option. (for details of how to manually programme these presets, see page 13, step a).

Refer to your VCR instruction manual to find out how to find the output channel of your VCR.

Connecting a VCR that supports Smartlink:

Smartlink is a direct link between the TV set and the VCR. For more information on Smartlink, please refer to the instruction manual of your VCR.If you use a VCR that supports Smartlink, please connect the VCR to the TV using a Scart lead to the Scart ⏎2/⇆ **F**.

If you have connected a decoder to the Scart ⏎2/⇆ or through a VCR connected to this Scart:

Select the "Manual Programme Preset" option in the "Set Up" menu and after entering the "Decoder**" option, select "On" (by using ▼ or ▲). Repeat this option for each scrambled signal.

**This option is only available depending on the country you have selected in the "Language/Country" menu.

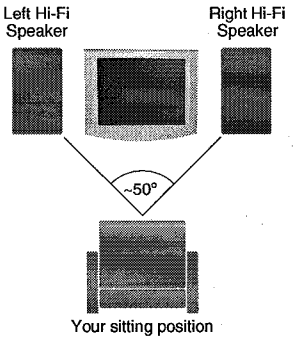
continued...

Connecting to external Audio Equipment:

Plug in your Hi-Fi equipment to the audio output sockets **E** if you wish to amplify the audio output from TV. Next, using the menu system, select the "Sound Adjustment" menu. Enter the "Detail Set Up" option and set "TV Speakers" to "Off".

Audio level of the external speakers can be modified by pressing the volume buttons on the remote control. Also treble and bass settings can be modified through the "Sound Adjustment" menu.

To enjoy "Dolby Virtual" sound effect through your Hi-Fi equipment:
Place the speakers of your equipment in front of your listening position and beside the TV set but keeping a distance of 50 cm between each speaker and the TV set.
Then by using the menu system, select the menu "Sound Adjustment". Next select "Detail Adjustment" and set "Dolby Virtual" to "On".



Using Optional Equipment

1 Connect your equipment to the designated TV socket, as indicated in the previous page.

2 Switch on the connected equipment.

3 To watch the picture of the connected equipment, press the ⊖ button repeatedly until the correct input symbol appears on the screen.

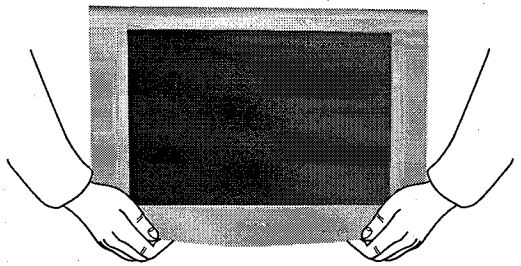
Symbol	Input Signals
⊖1	• Audio / video input signal through the Scart connector **D**
⊖▭	• RGB input signal through the Scart connector **D**. This symbol appears only if an RGB source has been connected.
⊖2	• Audio/video input signal through the Scart connector **F**.
⊖S2	• S Video Input signal through the Scart connector **F**. This symbol appears only if an S Video source has been connected.
⊖3	• Video input signal through the phono socket **B** and Audio input signal through **C**.
⊖S3	• S Video Input signal through the front S Video input jack **A** and Audio signal through **C**. This symbol appears only if an S Video source has been connected.

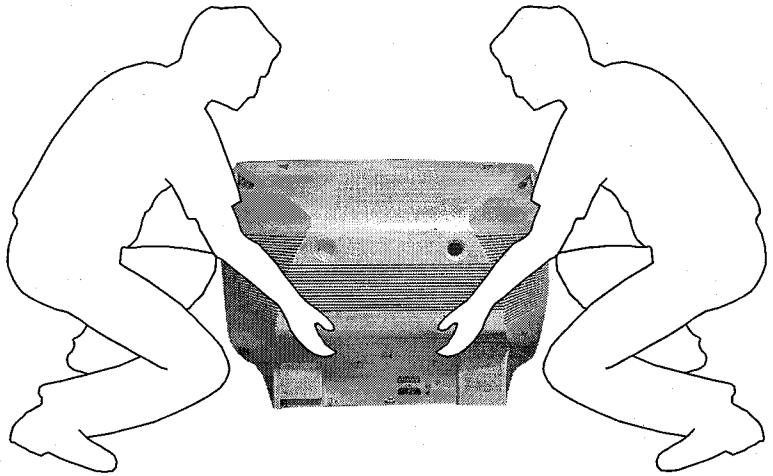
4 Press ▢ button on the remote control to return to the normal TV picture.

For Mono Equipment
Connect the phono plug to the L/G/S/I socket on the front of the TV and select ⊖3 or ⊖S3 input signal using the instructions above. Finally, refer to the "Sound Adjustment" section of this manual and select "Dual Sound" "A" on the sound menu screen.

Lifting the TV Set

4-103-269-51
41032695I





Recyclable

Specifications

TV system:
Depending on your country selection:
B/G/H. D/K

Colour system:
PAL, SECAM
NTSC 3.58, 4.43 (only Video In)

Channel Coverage:

VHF:	E2-E12
UHF:	E21-E69
CATV:	S1-S20
HYPER:	S21-S41
D/K	R1-R12, R21-R69

Picture Tube:
Flat Display FD Trinitron:
29" (approx. 73 cm. measured diagonally)

Rear Terminals

21-pin scart connector (CENELEC standard) including audio/video input, RGB input, TV audio/video output.

21-pin Scart connector (CENELEC (SMARTLINK) standard) including audio / video input, S video input, selectable audio / video output and Smartlink interface.

Audio outputs (Left/Right) - phono jacks

Side Terminals

3 S Video input – 4 pin DIN
3 video input – phono jack
3 audio input – phono jacks
headphones jack

Sound Output:
2 x 14 W (music power)
2 x 7 W (RMS)

Power Consumption:
94 W

Standby Power Consumption:
0.5 W

Dimensions (w x h x d):
Approx. 771 x 592 x 553 mm.

Weight:
Approx. 49 Kg.

Accessories supplied:
1 Remote Control (RM-947)
2 Batteries (IEC designated, AA/R6 size)

Other features:
- Teletext, Fastext, TOPtext
- Sleep Timer
- Smartlink (direct link between your TV set and a compatible VCR. For more information on Smartlink, please refer to the Instruction Manual of your VCR).
- Dolby Virtual.

Design and specifications are subject to change without notice

Ecological Paper - Totally Chlorine Free

Troubleshooting

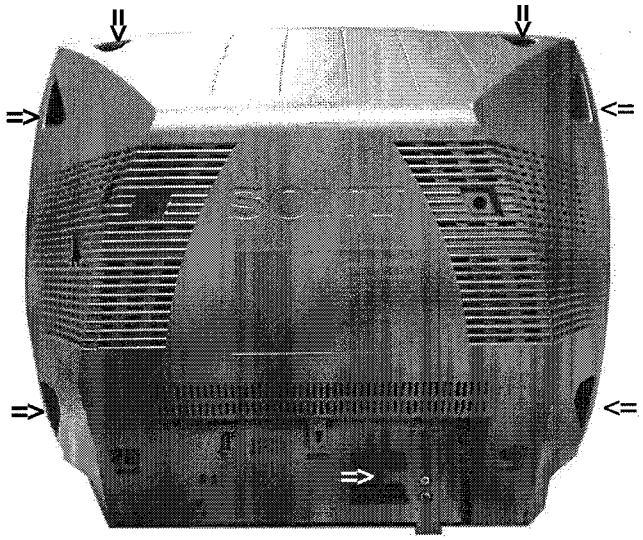
Here are some simple solutions to the problems which may affect the picture and sound.

Problem	Solution
No picture (screen is dark), no sound.	• Check the aerial connection. • Plug the TV in and press the ⏻ button on the front of TV. • If the standby indicator ⏻ is on, press TV/⏻ button on the remote control.
Poor or no picture (screen is dark), but good sound.	• Using the menu system, select the "Picture Adjustment" menu and select "Reset" to return to the factory settings.
No picture or no menu information from equipment connected to the Scart connector.	• Check that the optional equipment is on and press the button repeatedly on the remote control until the correct input symbol is displayed on the screen.
Good picture, no sound.	• Press the +/- button on the remote control. • Check that "TV Speakers" is "On" on the "Sound Adjustment" menu. • Check that headphones are not connected.
No colour on colour programmes.	• Using the menu system, select the "Picture Adjustment" menu and select "Reset" to return to factory settings.
Distorted picture when changing programmes or selecting teletext.	• Turn off any equipment connected to the Scart connector on the rear of the TV.
Wrong characters appear when viewing teletext.	• Using the menu system, enter to the "Language/ Country" menu and select the country in which you operate the TV. For Cyrillic languages, we recommend to select Russia country in the case that your own country does not appear in the list.
Picture slanted.	• Using the menu system, select the "Picture Rotation" option in the "Detail Set Up" menu to correct the slant.
Noisy picture when viewing a TV channel.	• Using the menu system, select the "Manual Programme Preset" menu and adjust Fine Tuning (AFT) to obtain better picture reception. • Using the menu system, select the "Noise Reduction" option in the "Detail Set Up" menu and select "Auto" to reduce the noise in the picture.
No unscrambling or unstable picture whilst viewing a scrambling channel with a decoder connected through the Scart connector 2/.	• Using the menu system, select the "Set Up" menu. Then enter to the "Detail Set Up" option and set "AV2 Output" to "TV".
Remote control does not function.	• Replace the batteries.
The standby indicator ⏻ on the TV flashes.	• Contact your nearest Sony service centre.

In case of problems, have your TV serviced by qualified personnel. Never opening the casing yourself.

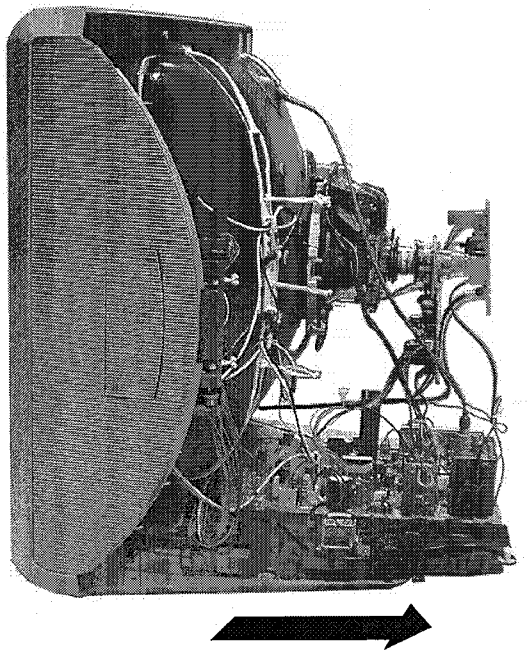
SECTION 2 DISASSEMBLY

2-1. Rear Cover Removal

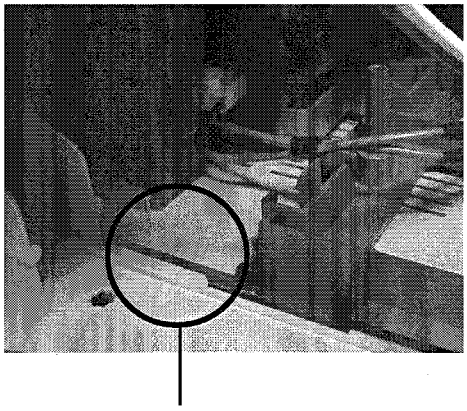


Release the mains power cable from its securing posts. Remove the rear cover fixing screws indicated. Pull the rear cover away from the front beznet.

2-2. Chassis Removal and Refitting

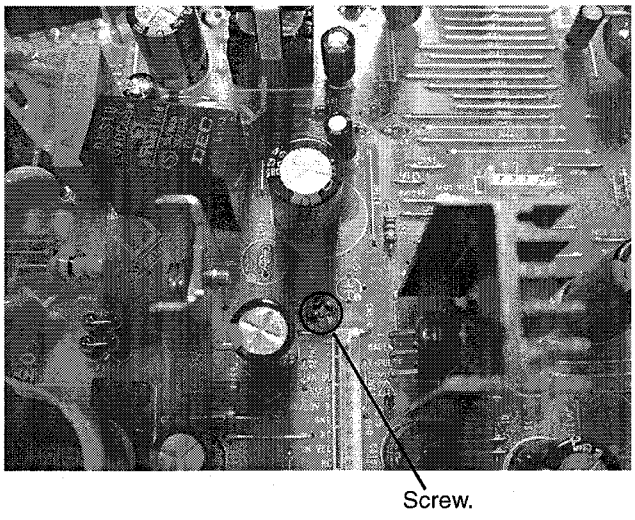


To remove lift the main bracket rear slightly and slide the chassis away from the beznet. Ensure that the interconnecting leads are released from their purse locks to prevent damage being caused.



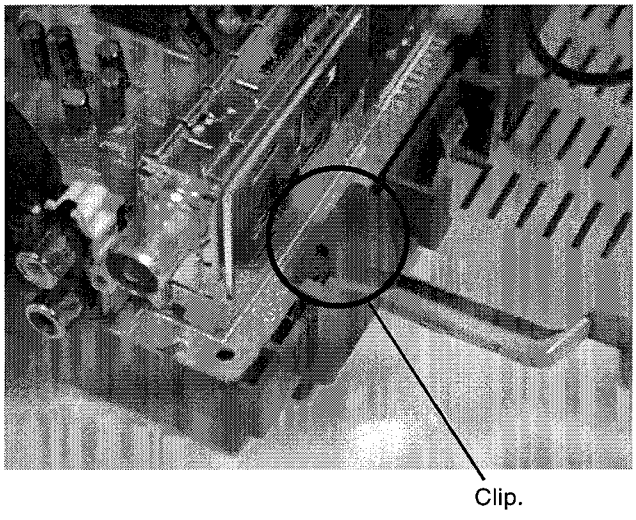
When refitting the chassis ensure that the main bracket is located in the beznet guide slots before sliding the chassis forwards. Refit the interconnecting leads in their respective purse locks.

2-3. A Board PWB Removal [Step 1]



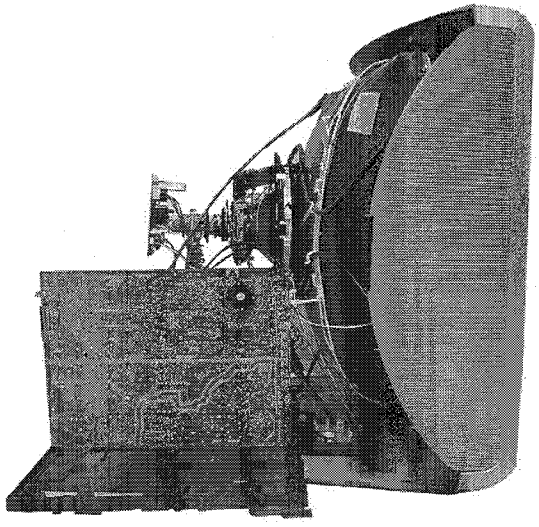
Remove the screw securing the PWB to the main bracket.

2-4. A Board PWB Removal [Step 2]



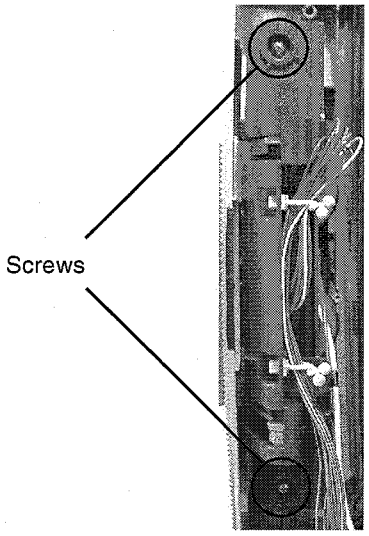
Release the 5 securing clips located at the side and front of the chassis and slide the PWB clear of the bracket.

2-5. Service Position



Place the A Board PWB in the position indicated to carry out servicing.

2-6. Side Control Module Removal

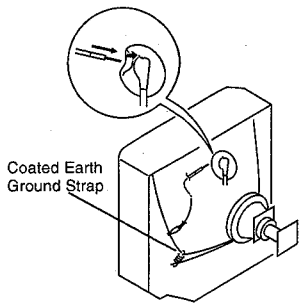


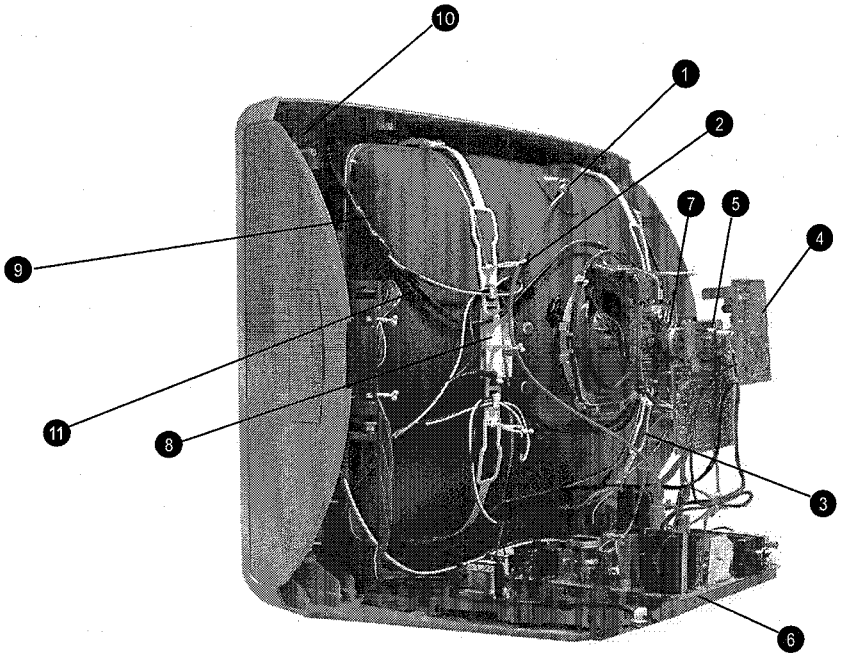
Remove the two screws fixing the user control module to the side of the set. The control module can then be removed by sliding it towards the rear of the set allowing access to the H2 Board.

2-7. Picture Tube Removal

WARNING:
BEFORE REMOVING
THE ANODE CAP

High voltage remains in the CRT even after the power is disconnected. To avoid electric shock, discharge CRT ***before*** attempting to remove the anode cap. Short between anode and CRT coated earth ground strap.

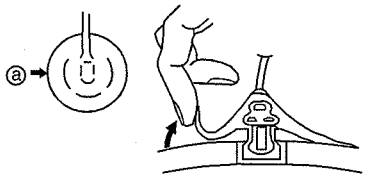




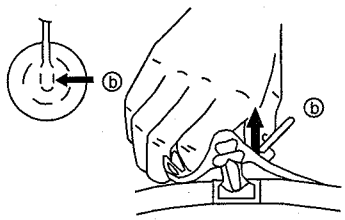
1. Discharge the anode of the CRT and remove the anode cap.
2. Release the EHT lead from its CRT support bracket.
3. Unplug all interconnecting leads from the Deflection yoke, degaussing coils, Rotation coil and CRT grounding strap.
4. Remove the C Board from the CRT.
5. Loosen the VM Block fixing screw and remove.
6. Remove the chassis assembly.
7. Loosen the Deflection yoke fixing screw and remove.
8. Remove the Degaussing Coil holders.
9. Place the set with the CRT face down on a cushion.
10. Unscrew the four CRT fixing screws [located on each CRT corner] and remove the CRT.
11. Remove the Degaussing Coils.
    Remove the CRT grounding strap and spring tentioners.
    [Take care not to handle the CRT by the neck.]

Removal of the Anode-Cap

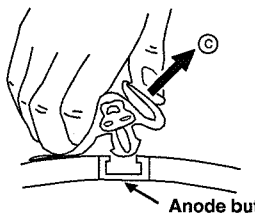
*** REMOVING PROCEDURES.**



① Turn up one side of the rubber cap in the direction indicated by the arrow ⓐ



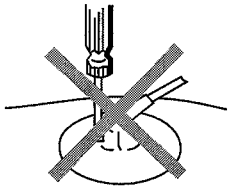
② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow ⓑ

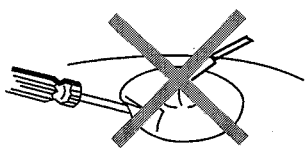


③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling it up in the direction of the arrow ⓒ

How to handle the Anode-Cap

1. To prevent damaging the surface of the anode-cap do not use sharp materials.
2. Do not apply too great a pressure on the rubber, as this may cause damage to the anode connector.
3. A metal fitting called a shatter hook terminal is fitted inside the rubber cap.
4. Do not turn the rubber foot over excessively, this may cause damage if the shatter hook sticks out.





SECTION 3 SET-UP ADJUSTMENTS

- When complete readjustment is necessary or a new picture tube is installed, carry out the following adjustments.
- Unless there are specific instructions to the contrary, carry out these adjustments with the rated power supply.
- Unless there are specific instructions to the contrary, set the controls and switches to the following settings :

Contrast ..... 80% [or remote control normal]

Brightness 50%

Carry out the adjustments in the following order :

3-1. Beam Landing.
3-2. Convergence.
3-3. Focus.
3-4. White Balance.

Note : Test equipment required.
1. Color bar/pattern generator.
2. Degausser.
3. Oscilloscope.
4. Digital multimeter.

Preparation:

1. In order to reduce the influence of geomagnetism on the set's picture tube, face it in an easterly or westerly direction.
2. Switch on the set's power and degauss with the degausser.

3-1. Beam Landing

1. Input an all white signal from the pattern generator. Set the Contrast and Brightness to normal.
2. Set the pattern generator raster signal to Red.
3. Move the deflection yoke forward and adjust with the purity control so that the Red is at the centre and the Blue and Green take up equally sized areas on each side of the screen. [See Fig.3-1 - 3-3].
4. Move the deflection yoke backwards and adjust so that the entire screen becomes Red. [See Fig.3-1]
5. Switch the raster signal to Blue, then to Green and verify the condition.
6. When the position of the deflection yoke has been determined, fasten the deflection yoke with the screws.
7. If the beam does not land correctly in all the corners, use a magnet to correct it. [See Fig.3-4]

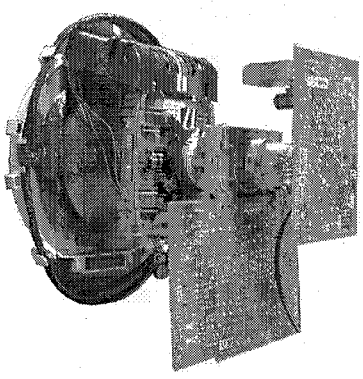


Fig. 3-1.

Caution :

High voltages are present on the Deflection yoke terminals - take care when handling the Deflection yoke whilst carrying out adjustments.

Fig. 3-2.

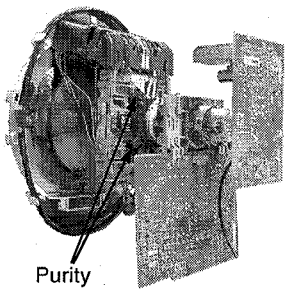
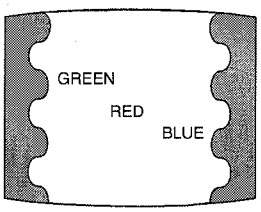


Fig. 3-3.



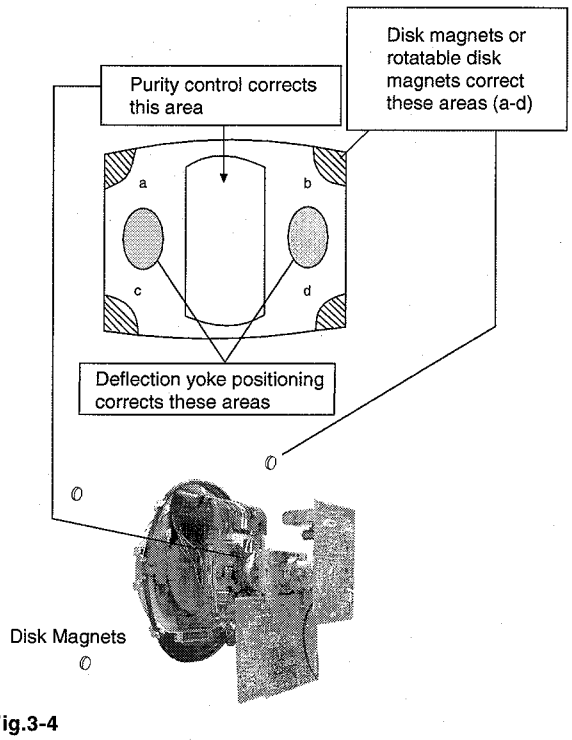


Fig.3-4

3-2. Convergence

Preparation:

- Before starting this adjustment, adjust the focus, horizontal size and vertical size.
- Minimize the Brightness setting.
- Input a dot pattern from the pattern generator.

Horizontal and Vertical Static Convergence

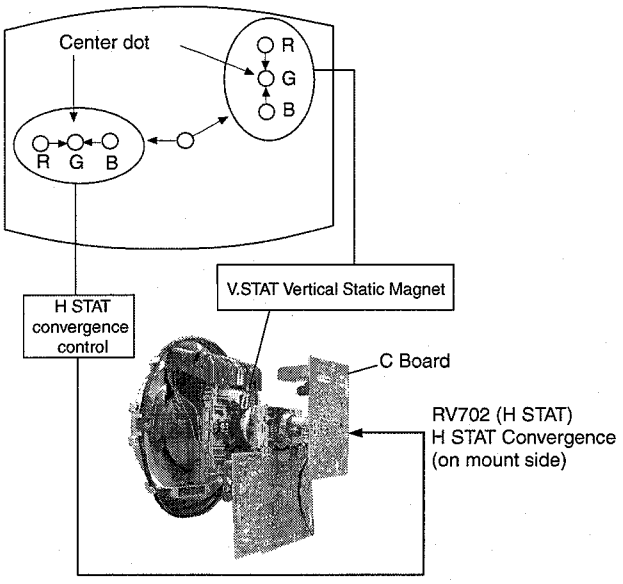
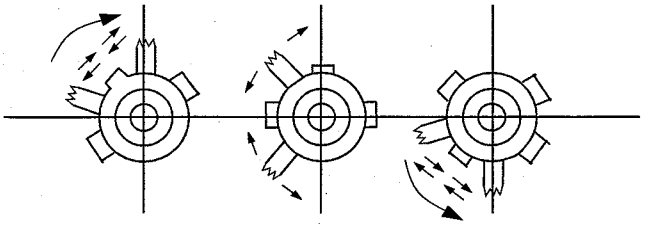


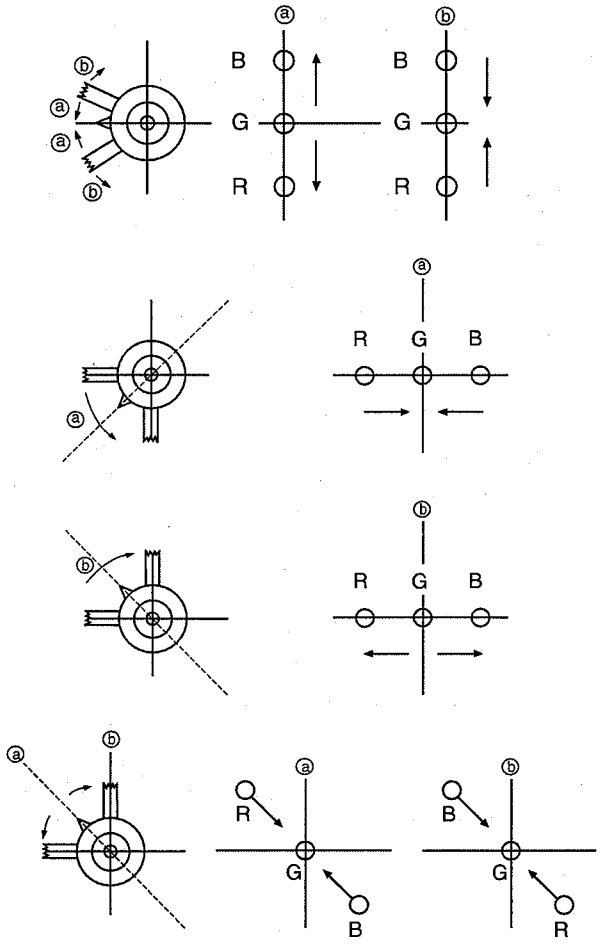
Fig.3-5

1. [Moving horizontally], adjust the H.STAT control so that the Red, Green and Blue points are on top of each other at the centre of the screen.
2. [Moving vertically], adjust the V.STAT magnet so that the Red, Green and Blue points are on top of each other at the centre of the screen.
3. If the H.STAT variable resistor is unable to bring the Red, Green and Blue points together at the centre of the screen, adjust the horizontal convergence with the H.STAT variable resistor and the V.STAT magnet in the manner indicated below.
   [In this case, the H.STAT variable resistor and the V.STAT magnet influence each other].

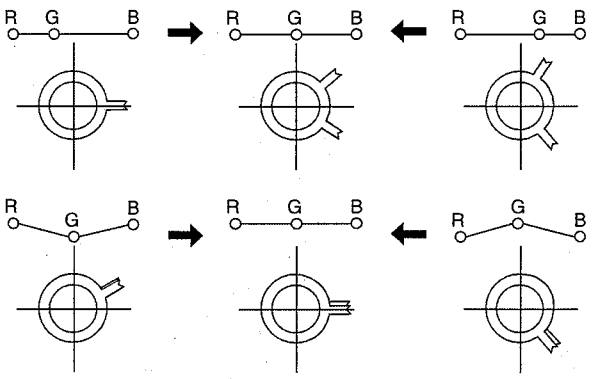
   - Tilt the V.STAT magnet and adjust the static convergence by opening or closing the V.STAT magnet.



4. If the V.STAT magnet is moved in the direction of the (a) and (b) arrows, the Red, Green and Blue points move as indicated below.



Operation of the BMC (Hexapole) magnet.



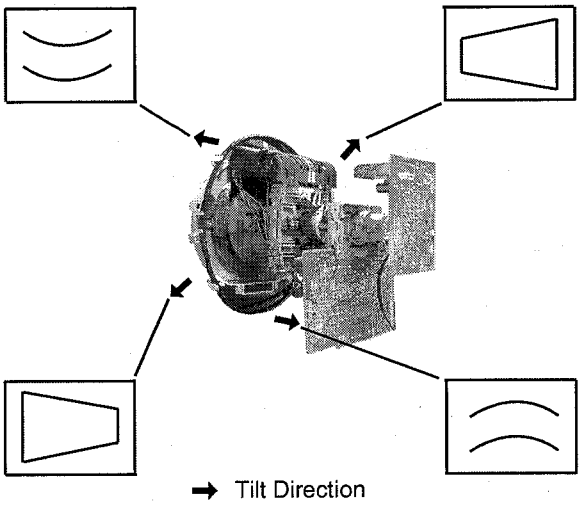
The movement of the magnets interact with each other and so the respective dot position should be monitored while carrying out this adjustment.
Use the H.STAT VR to adjust the Red, Green and Blue dots so that they coincide at the centre of the screen
(by moving the dots in the horizontal direction).

Geometry Adjustment.

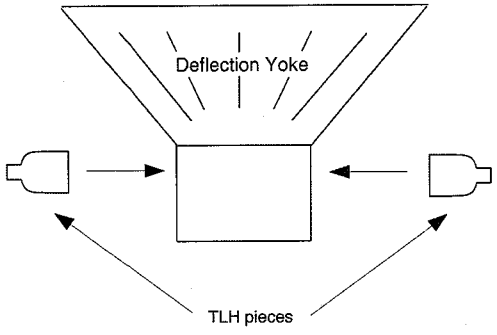
Preparation:

Before starting this adjustment, adjust the horizontal and vertical static convergence.

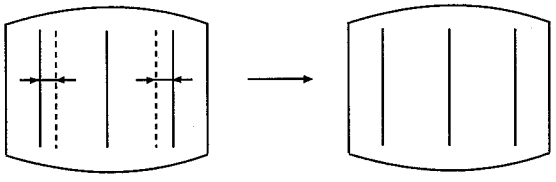
1. Remove the deflection yoke spacer.
2. Tilt the deflection yoke as indicated in the figure below and optimise the geometry.
   Tilting the DY Up and Down will balance the upper and lower pin adjustment.
   Tilting the DY Left and Right will balance the H-Trap adjustment.
3. Re-install the deflection yoke spacer.



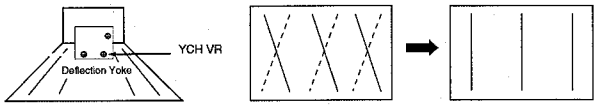
HTIL Adjustment



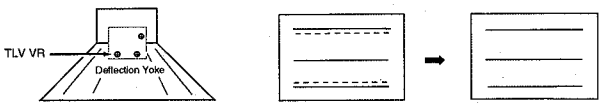
HTIL correction can be performed by adding a TLH correction assembly to the Deflection yoke.



YCH Adjustment

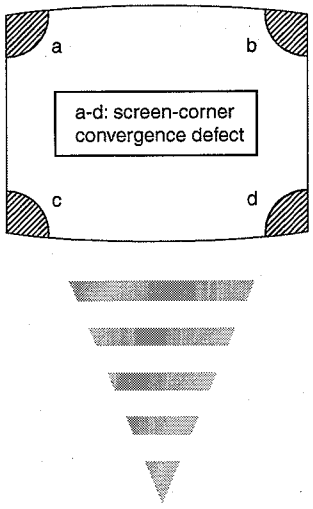


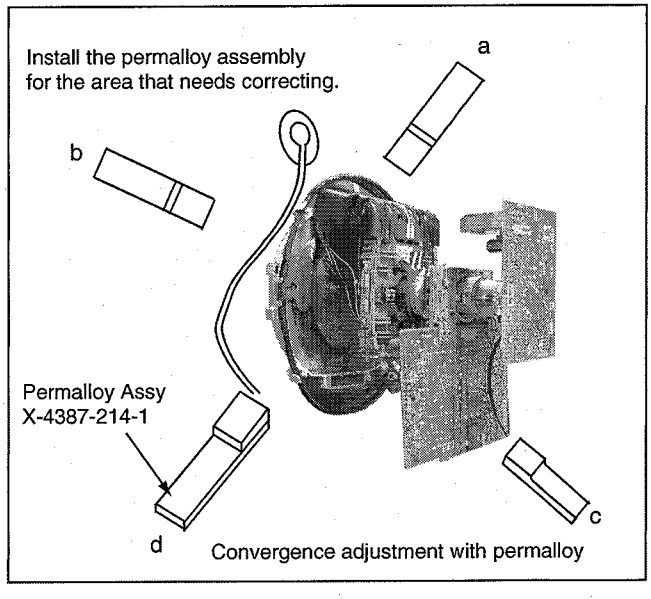
TLV Adjustment



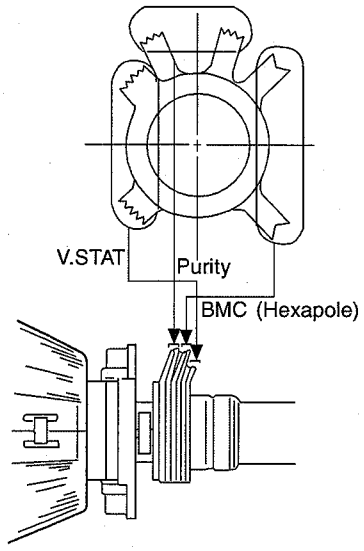
Screen Corner Convergence

If you are unable to adjust the corner convergence properly, this can be corrected with the use of permalloy magnets.



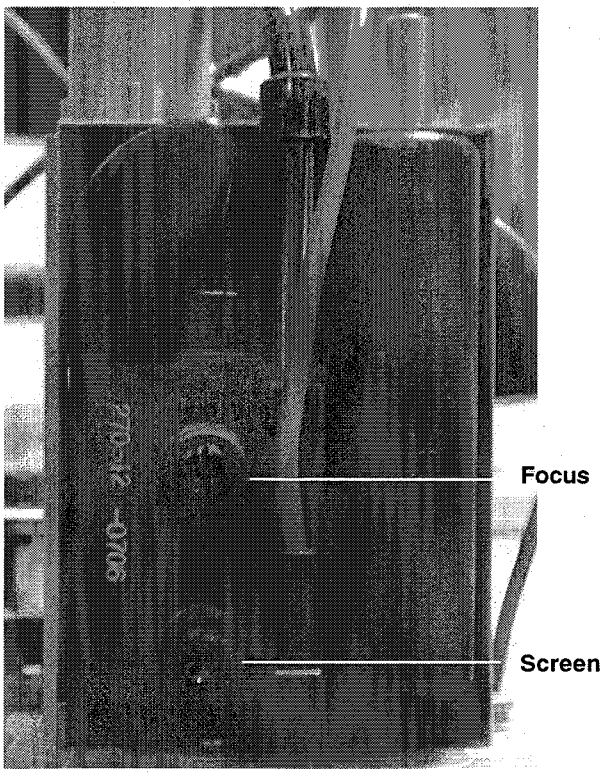


Layout of each control



3-3. Focus Adjustment

1. Receive a television broadcast signal.
2. Normalize the picture setting.
3. Adjust the focus control located on the flyback transformer to obtain the best focus at the centre of the screen.
   Bring only the centre area of the screen into focus, the magenta-ring appears on the screen. In this case, adjust the focus to optimize the screen uniformly.



3-4. Screen (G2), White Balance

[Adjustment in the service mode using the remote commander]

G2 adjustment

1. Input a dot signal from the pattern generator.
2. Enter the 'Service Mode' by pressing 'TEST', 'TEST' and '38' (TT-38) on the remote commander, to set up the G2 service adjustment mode.
3. Whilst watching the picture, adjust the G2 control [SCREEN] located on the Flyback Transformer to the point where the OSD menu indication shows "OK".

White balance adjustment for TV mode

1. Input an all-white signal from the pattern generator.
2. Enter into the 'Service Mode' by pressing 'TEST', 'TEST' and 'MENU' on the Service Commander.
3. Select 'Service' from the on screen menu display and press the right arrow button on the remote commander.
4. The 'Service' menu will appear on the screen.
   [See Page 19]
5. Set the 'Contrast' to MAX.
6. Set the 'R-Drive' to 25.
7. Adjust the 'G-Drive' and the 'B-Drive' so that the white balance becomes optimum.
8. Press the 'OK' button to write the data for each item.
9. Set the 'Contrast' to MIN.
10. Adjust the 'G-Cutoff', and the 'R-Cutoff' with the left and right buttons on the remote commander so that the white balance becomes optimum.
11. Press the 'OK' button to write the data for each item.

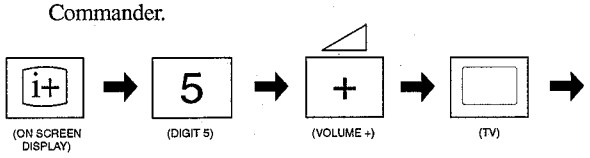
SECTION 4 CIRCUIT ADJUSTMENTS

4-1. Electrical Adjustments

Service adjustments to this model can be performed using the supplied remote Commander RM-947.

How to enter into the Service Mode

1. Turn on the main power switch and enter into the stand-by mode.
2. Press the following sequence of buttons on the Remote Commander.



'TT—' will appear in the upper right corner of the screen. Other status information will also be displayed.

3. Press 'MENU' on the remote commander to obtain the following menu on the screen.

```
Geometry
Service
Design
Status
Sound
IF adjust
Error Menu

FE-2 Stereo v4.46
Factory data   00h  05h
MSP Device : MSP3411G
```

4. Move to the corresponding adjustment item using the up or down arrow buttons on the Remote Commander.
5. Press the right arrow button to enter into the required menu item.
6. Press the 'Menu' button on the Remote Commander to quit the Service Mode when all adjustments have been completed.

Note :

- Before performing any adjustments ensure that the correct model has been selected in the 'Model Setting' menu.
- After carrying out the service adjustments, to prevent the customer accessing the 'Service Menu' switch the TV set OFF and then ON.

ERROR MENU			
E02	OCP	(0, 255)	0
E03	OVP N/A	(0, 255)	0
E04	VSYNC	(0, 255)	0
E05	IKR	(0, 255)	0
E06	IIC	(0, 255)	0
E07	NVM	(0, 255)	0
E08	JUNGLE	(0, 255)	0
E09	TUNER	(0, 255)	0
E10	SOUNDP	(0, 255)	0
E11	8V	(0, 255)	0
WORKING TIME			
HOURS			2
MINUTES			11

SERVICE		
Offset-R	(0, 63)	Adj
Offset-G	(0, 63)	Adj
R-Drive	(0, 63)	25
G-Drive	(0, 63)	Adj
B-Drive	(0, 63)	Adj
Peak-Freq	(0, 3)	0
Luma-Delay	(0, 15)	8
SC0	(0, 3)	2
White-Peak	(0, 15)	15
Subcont	(0, 15)	4
Subright	(0, 63)	31
Subcol	(0, 63)	Adj
Subsharp	(0, 63)	31
Cutoff Br.	(0, 63)	60
Br OSD	(0, 15)	10
Br TXT	(0, 15)	9

GEOMETRY		
V-Linearity	(0, 63)	Adj
V-Scroll	(0, 63)	32
Left-HBlk	(0, 15)	8
Right-HBlk	(0, 15)	6
V-Angle	(0, 63)	Adj
V-Bow	(0, 63)	Adj
H-Centre	(0, 63)	Adj
H-Size	(0, 63)	Adj
Pin-Amp	(0, 63)	Adj
U-Corner-Pin	(0, 63)	Adj
L-Corner-Pin	(0, 63)	Adj
Pin Phase	(0, 63)	Adj
V-Slope	(0, 63)	35
V-Size	(0, 63)	Adj
S-Correction	(0, 63)	Adj
V-Centre	(0, 63)	Adj
V-Zoom	(0, 63)	23
Magenta	(0, 63)	40

IF ADJUST		
AGC Adjust	(-16, +15)	+0
Automute		1
Audio Gain		0
L Gating		0

Sub Brightness Adjustment

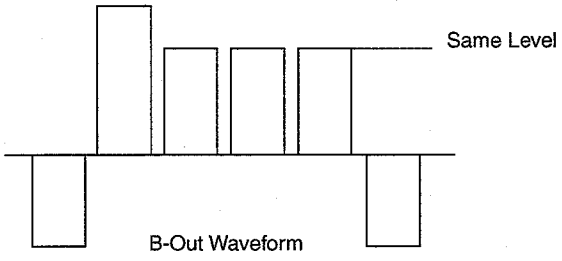
1. Input a Monoscope pattern.
2. Press 'TEST' 'TEST' 13 on the Remote Commander.
3. Adjust the 'Sub-Brightness' data so that there is barely a difference between the 0 IRE and 10 IRE signal levels.

Sub Contrast Adjustment

1. Input a video signal that contains a small 100% white area on a black background.
2. Connect an digital voltmeter to Pin 10 of J701 [C Board].
3. Adjust the Sub-Contrast ['TT11'] to obtain a voltage of 105 +/- 5V.

Sub Colour Adjustment

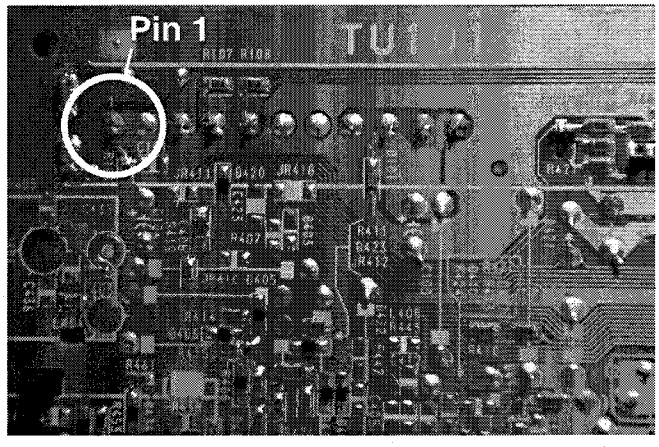
1. Receive a PAL colour bar signal.
2. Connect an oscilloscope to Pin 5 of CN003 [A Board].
3. Enter into the 'Service' service menu.
4. Adjust the 'Sub Colour' data so that the Cyan, Magenta and Blue colour bars are of equal levels as indicated below.



Tuner AGC Adjustment

Note:
There should be no need to adjust the AGC as this is pre-adjusted during manufacture of the FRONTEND. If the AGC does need adjustment then follow steps 1. to 4. below.

1. Receive a signal of 62dBuV / 75 ohm terminated via the tuner antenna socket.
2. Connect a voltmeter to pin1 of TU101 [print side of A Board] or to the AGC pin of CN001 [mount side of A Board].
3. Confirm that the AGC voltage is 3.5volts +/- 0.3volts.
4. If adjustment is required, then re-adjust the AGC variable resistor (located at the top rear of the FRONTEND) to obtain a voltage of 3.5V +/- 0.3V.

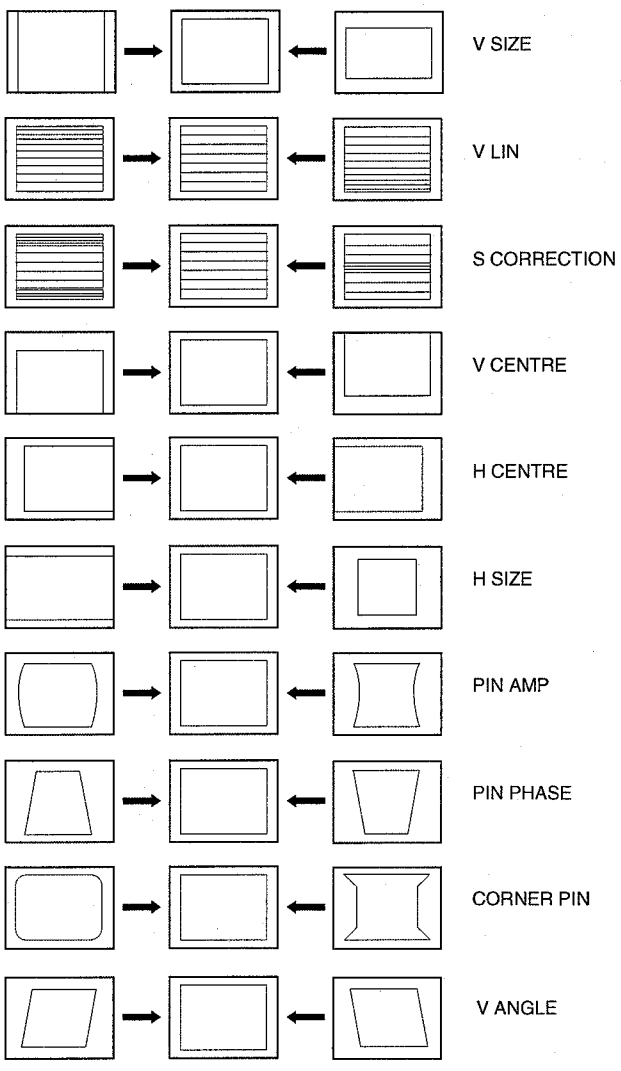


[Print side of A board]

Deflection System Adjustment

1. Enter into the 'Geometry' service menu.
2. Select and adjust each item in order to obtain the optimum image.

GEOMETRY		
V-Linearity	(0, 63)	Adj
V-Scroll	(0, 63)	32
Left-HBlk	(0, 15)	8
Right-HBlk	(0, 15)	6
V-Angle	(0, 63)	Adj
V-Bow	(0, 63)	Adj
H-Centre	(0, 63)	Adj
H-Size	(0, 63)	Adj
Pin-Amp	(0, 63)	Adj
U-Corner-Pin	(0, 63)	Adj
L-Corner-Pin	(0, 63)	Adj
Pin Phase	(0, 63)	Adj
V-Slope	(0, 63)	35
V-Size	(0, 63)	Adj
S-Correction	(0, 63)	Adj
V-Centre	(0, 63)	Adj
V-Zoom	(0, 63)	23
Magenta	(0, 63)	40



4-2. TEST MODE 1:

Test Mode 1 is available by pressing the 'TEST' button once, OSD 'T' appears. The functions described below are available by selecting the indicated keys. The 'T' is released automatically after each command is executed.

KEY	T-MODE FUNCTION
volume +	volume maximum
volume -	Picture minimum
picture +	Picture maximum
picture -	Picture minimum
colour up	colour maximum
colour down	colour minimum
brightness - bright	brightness maximum
brightness - dark	brightness minimum
hue - purplish	hue - purplish
hue - greenish	hue - greenish
sharpness - sharp	sharpness maximum
sharpness - soft	sharpness minimum
balance left	balance full left
balance right	balance full right
treble up	treble maximum
treble down	treble minimum
bass up	bass maximum
bass down	bass minimum

4-3. TEST MODE 2:

Test Mode 2 is available by pressing the 'TEST' button twice, OSD 'TT' appears. The functions described below are available by selecting the two numbers. To release the 'Test mode 2', press 00, 10, 20 ... twice or switch the TV set into Stand-by mode. In 'TT Menu' mode, it is possible to remove the Menu from the screen by pressing the Speaker Off button once. Pressing the Speaker OFF button a second time will cause the Menu to reappear. The function is kept even when the menu is not displayed on screen !!.

00	'TT' mode off
01	Picture maximum
02	Picture minimum
03	Set speaker/headphone Volume to 35%
04	Set speaker/headphone Volume to 50%
05	Set speaker/headphone Volume to 65%
06	Set speaker/headphone Volume to 80%
07	Ageing mode
08	Shipping Condition
11	Sub picture adjustment
12	Sub colour adjustment
13	Sub Brightness adjustment
14	Text H Position adjustment
15	Rotation Coil Test
16	Picture level 50%
19	Factory Mode Enable/Disable
21	Destination ADEKR
22	Destination BL
23	Destination ADEKR
24	Destination U
25	Destination ADEKR
26	Destination BL
27	Destination ADEKR
28	Destination ADEKR
31	Auto Shutoff Enable/Disable
33	Rotation ON/OFF
35	CRT 4:3 <> 16:9 ; Display TV status
36	Velocity Modulation (VM) OFF/ON test
38	G2 adjustment
41	Re-initialise NVM
43	Select Dual A sound
44	Select Dual B sound
45	Select Mono sound
46	Select Stereo sound
48	Set NVM as non virgin
49	Set NVM as virgin
51	Virtual Dolby on/off
52	Subwoofer / MPB (Bass enhancement) Enable
54	Dot structure C/M (chroma trap)ination ADEKR
55	Tuner selection (SONY/ALPS)
56	BBE enable/disable
57	BBE menu line enable/disable
61	Auto AGC Adjustment
62	AM from baseband enable/disable
63	Enable/Disable YC3 connector
64	Enable/Disable RGB priority
65	RGB auto-detect enable/disable
66	On timer enable/disable
67	Manual AGC Adjustment
68	Enable/Disable X26 countermeasure (N problem)
69	Enable/Disable ACI feature
71	Force PAL video
72	Un-force PAL (restore normal video condition)
73	Enable Zweiton D/K2 system (6.5/6.74)
74	Enable Zweiton D/K3 system (6.5/5.74)
78	Balance full left
79	Balance full right
87	Local keys test
89	Enable/Disable watchdog
91	Set 14:9 zoom mode
92	Set SMART zoom mode
93	Set 16:9 zoom mode
94	Set ZOOM mode
95	Set 4:3 zoom mode
99	Display Error and Working Time menu

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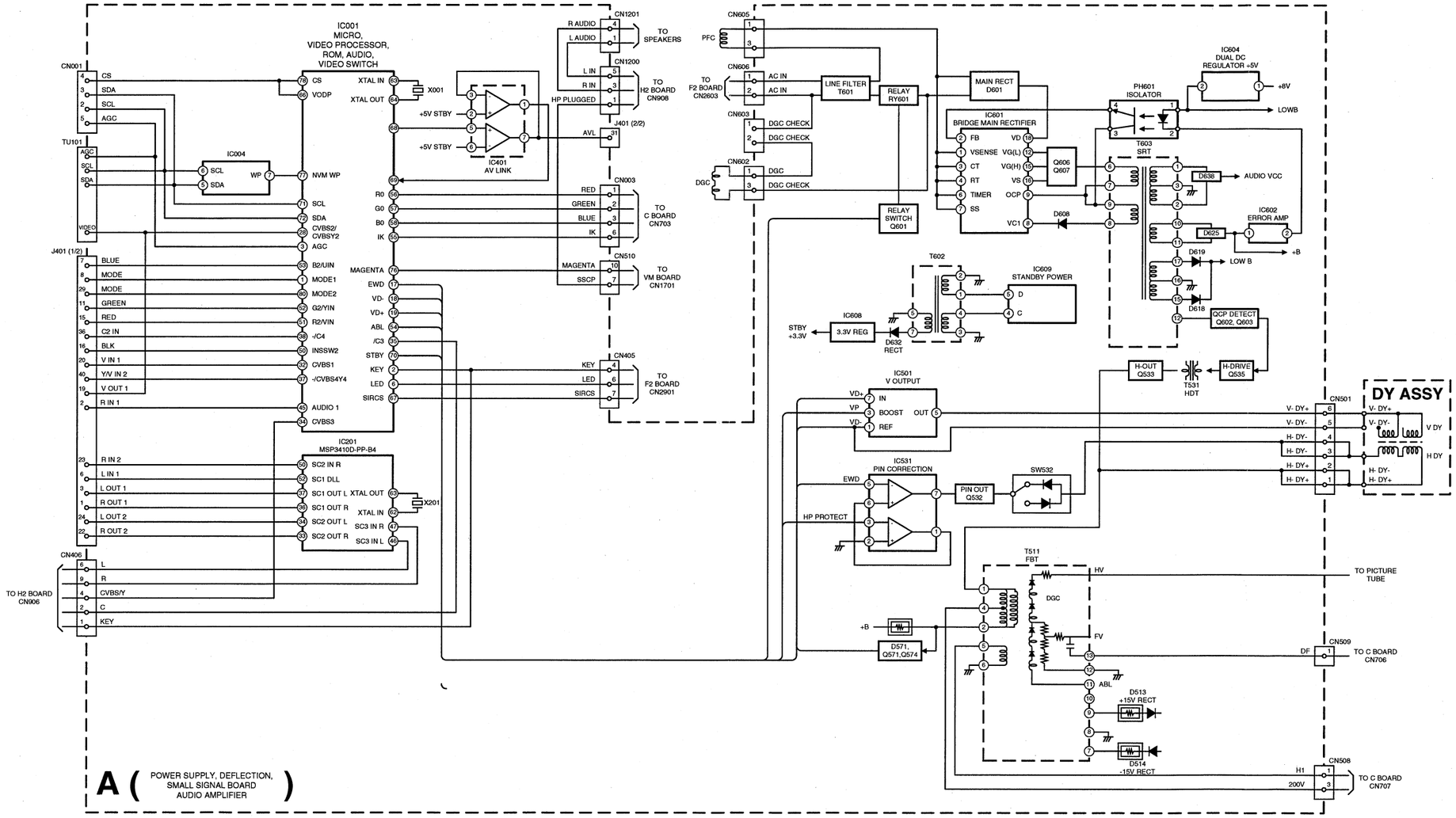
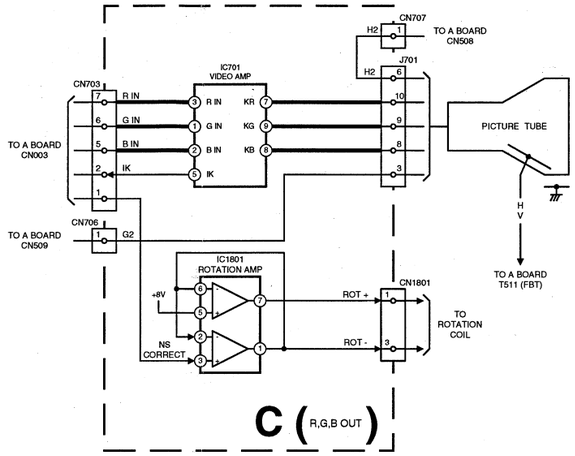
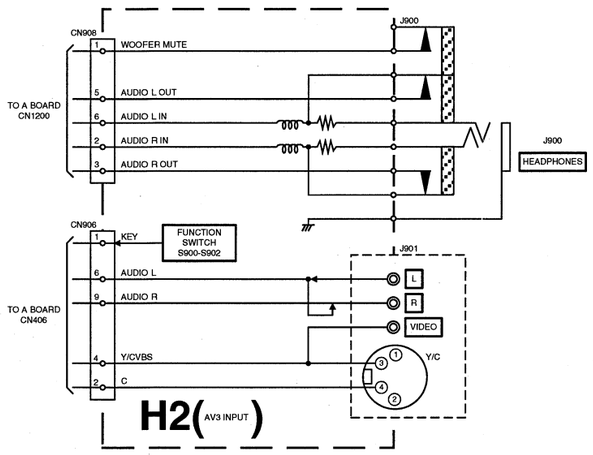
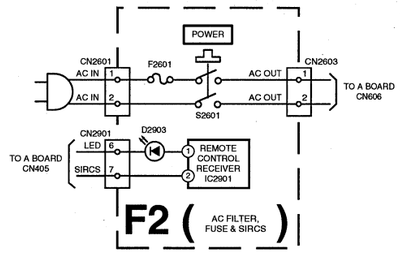
5-1. BLOCK DIAGRAMS (1)

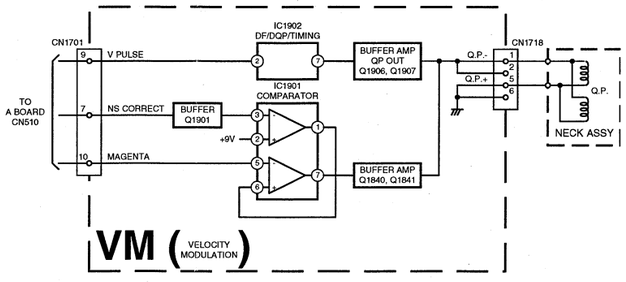


5-1. BLOCK DIAGRAMS (2)

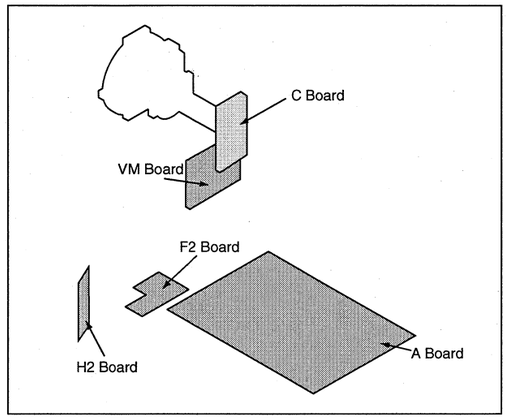








5-2. CIRCUIT BOARD LOCATION



5-3. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

Note :

- All capacitors are in µF unless otherwise noted.
- pF : µµF 50WV or less are not indicated except for electrolytic types.
- Indication of resistance, which does not have one for rating electrical power, is as follows.

Pitch : 5mm
Electrical power rating : 1/4W

- Chip resistors are 1/10W
- All resistors are in ohms.
  k = 1000 ohms, M = 1000,000 ohms
- : nonflammable resistor.
- : fusible resistor.
- : internal component.
- : panel designation or adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- All voltages are in Volts.
- Readings are taken with a 10Mohm digital mutimeter.
- Readings are taken with a color bar input signal.
- Voltage variations may be noted due to normal production tolerences.
- : B + bus.
- : B - bus.
- : RF signal path.
- : earth - ground.
- : earth - chassis.

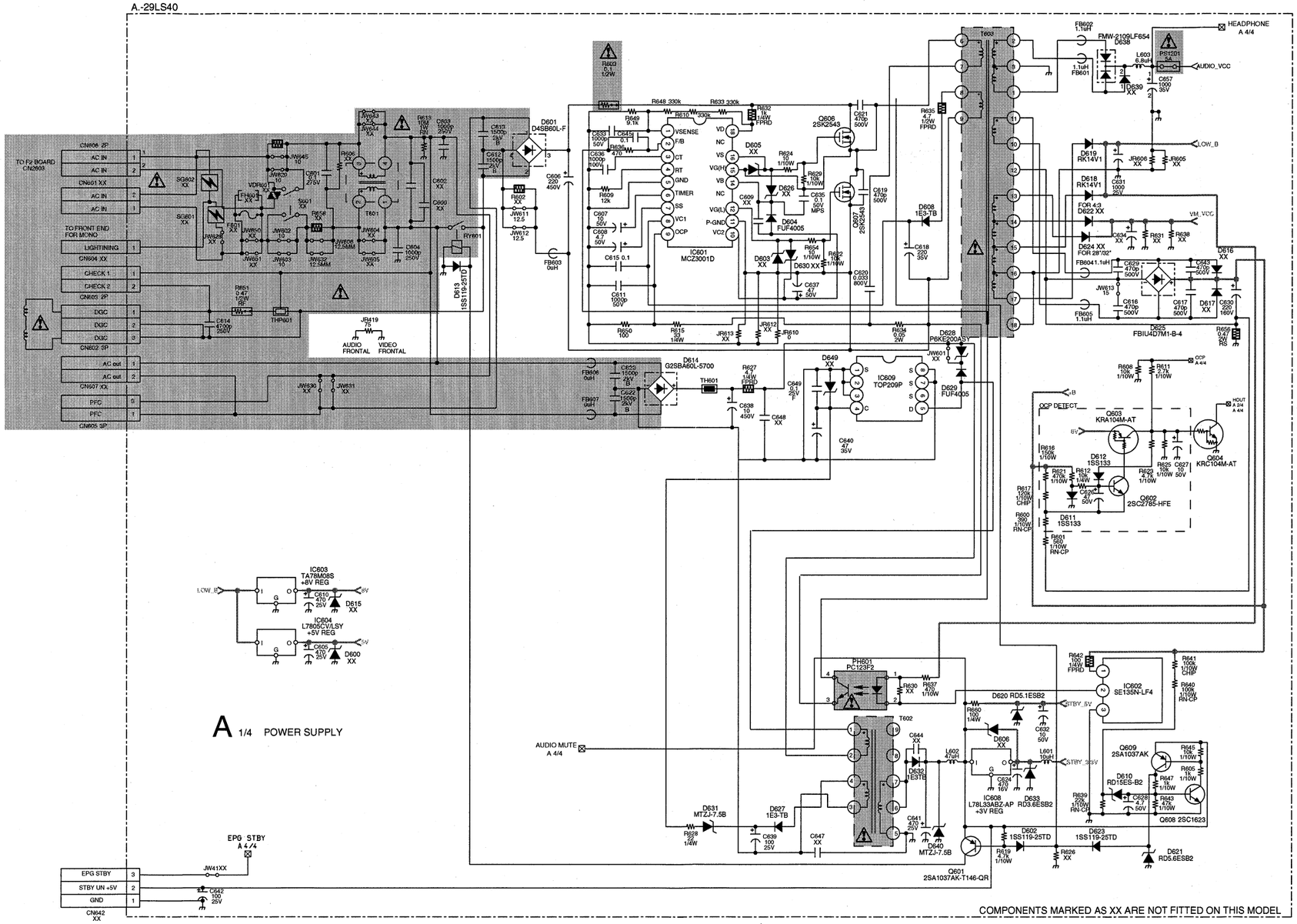
Reference Information

RESISTOR	RN	: METAL FILM
	RC	: SOLID
	FPRD	: NON FLAMMABLE CARBON
	FUSE	: NON FLAMMABLE FUSIBLE
	RS	: NON FLAMMABLE METAL OXIDE
	RB	: NON FLAMMABLE CEMENT
	RW	: NON FLAMMABLE WIREWOUND
	※	: ADJUSTMENT RESISTOR
COIL	LF-8L	: MICRO INDUCTOR
CAPACITOR	TA	: TANTALUM
	PS	: STYROL
	PP	: POLYPROPYLENE
	PT	: MYLAR
	MPS	: METALIZED POLYESTER
	MPP	: METALIZED POLYPROPYLENE
	ALB	: BIPOLAR
	ALT	: HIGH TEMPERATURE
	ALR	: HIGH RIPPLE

Note : The components identified by shading and marked ⚠ are critical for safety. Replace only with the part numbers specified in the parts list.

Note : Les composants identifiés par une trame et par une marque ⚠ sont d'une importance critique pour la sécurité. Ne les remplacer que par des pièces de numéro spécifié. specified.

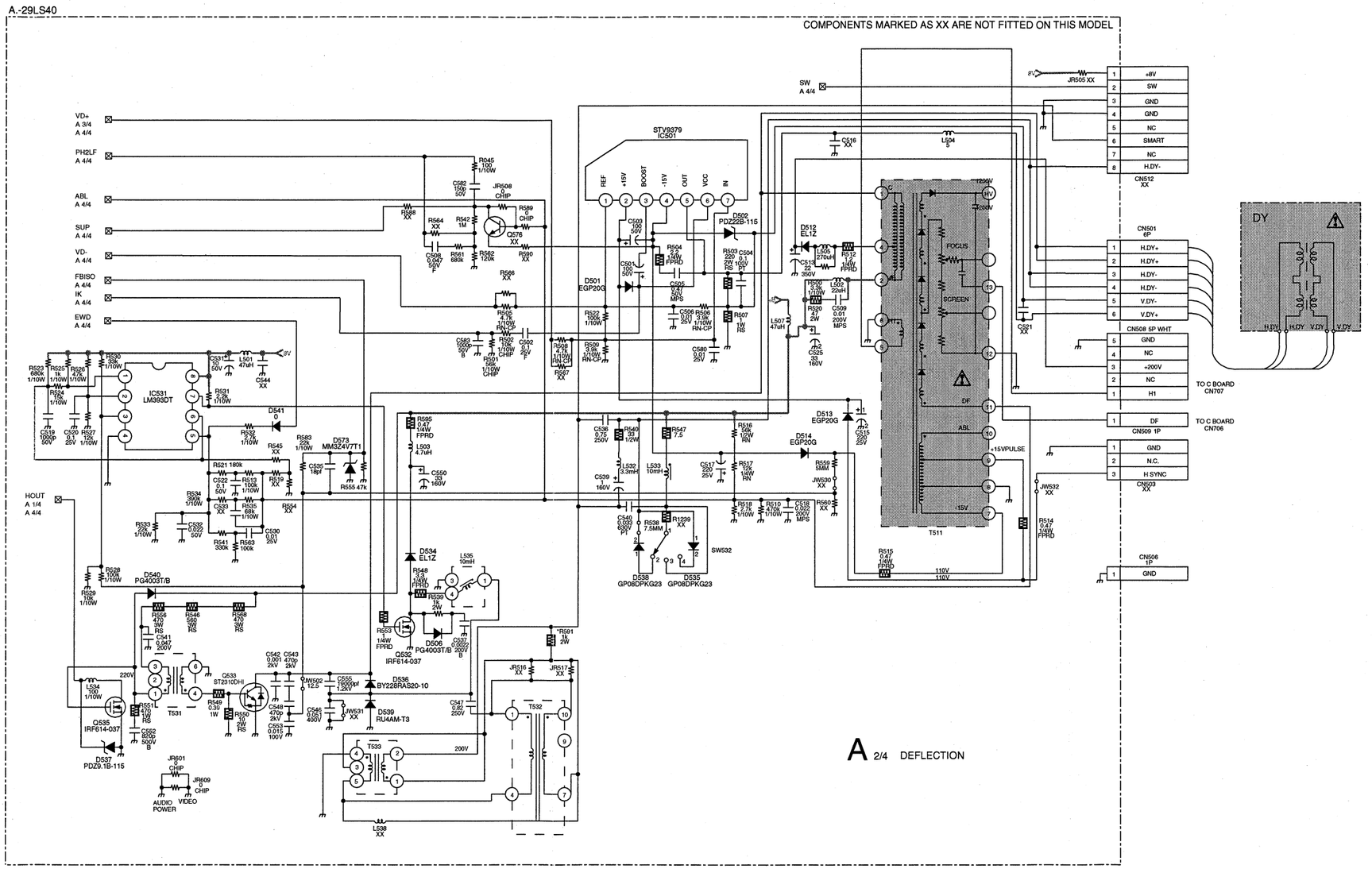
A-.29LS40



~ A Board Schematic Diagram [Power Supply] Page 1/4 ~

A.-29LS40

COMPONENTS MARKED AS XX ARE NOT FITTED ON THIS MODEL



A 2/4 DEFLECTION

~ A Board Schematic Diagram [Deflection] Page 2/4 ~

A-29LS40

A 3/4 VIDEO

SERVICE CONNECTOR

CN001 6P WHT: GND, SCL, SDA, CS, AGC

CN301 XX: CVBS A/D, +8V, AGC, GND, SCL, SDA, +5V, AM, OSS, CD IN, Y/D/VBSA, GND, GND, RIGHT D, LEFT D

CN102 XX: GND_A/BRD

CN101 XX: LIGHTNING

MONO STEREO

TU101: AGC, XS, SCL, SDA, +33V, IF, IF, GND, +5V, AM/AM, OSS, VIDEO

CN510 8P: 1 +B; 3 VM VCC; 4 NC; 5 GND; 6 LOW B; 7 SSCP; 8 VM OUT; 9 V-PULSE; 10 MAGENTA — TO VM BOARD CN1701

IC201 MSP3411G-PP-B8V3 I2CDTV564

J401 42P: R OUT 1, R IN 1, L OUT 1, GND, GND, L IN 1, BLUE, MODE, GND, AVL, GREEN, NC, GND, GND, RED, BLK, GND, GND, V OUT 1, V IN 1, GND, R OUT 2, R IN 2, L OUT 2, GND, GND, L IN 2, NC, MODE, GND, AVL, NC, NC, GND, GND, C2 IN, NC, GND, GND, V OUT 2, Y/V IN 2, GND

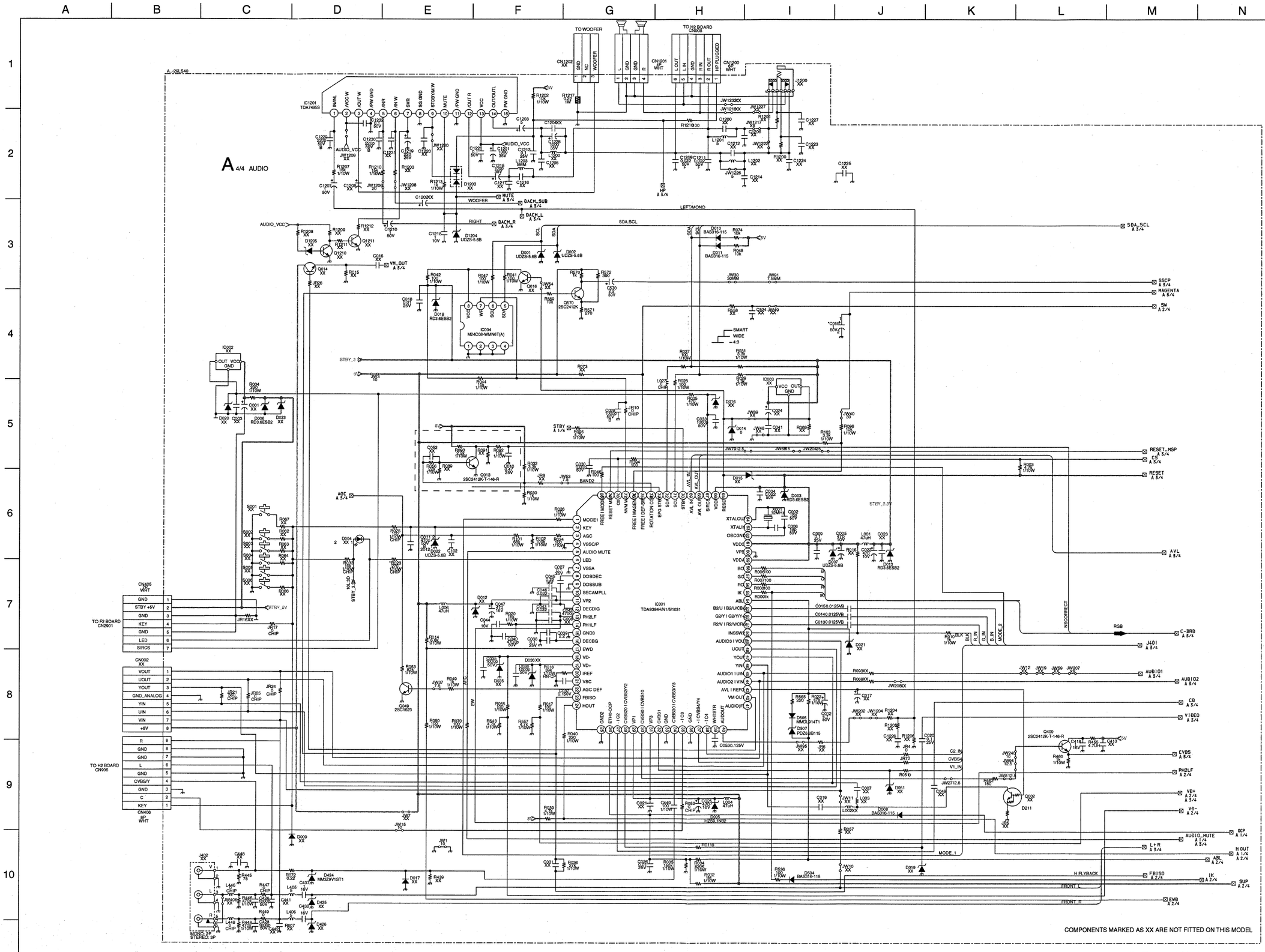
CN3302 XX: 1 From UOC; 2 GND; 3 AV2 OUT

CN003 7P WHT: 7 R; 6 G; 5 B; 4 +8V; 3 GND; 2 IK; 1 NSCORRECT — TO C BOARD CN703

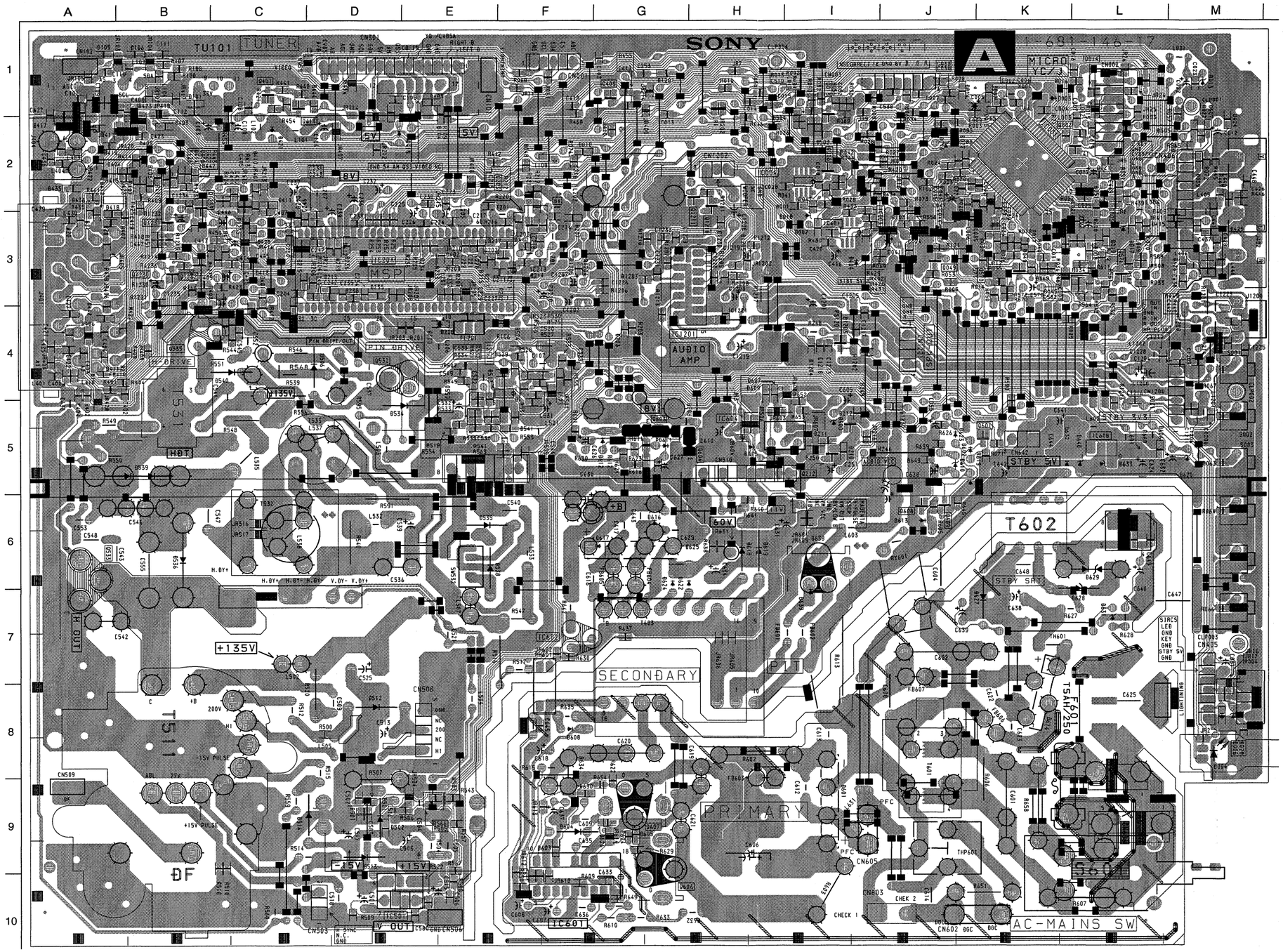
IC401 LM393DT

COMPONENTS MARKED AS XX ARE NOT FITTED ON THIS MODEL

~ A Board Schematic Diagram [Video] Page 3/4 ~



~ A Board Schematic Diagram [Audio] Page 4/4 ~



IC Voltage Table

Ref No	Pin No	Voltage (V)	Ref No	Pin No	Voltage (V)
IC001	1	0	IC001	67	4.8
	2	3.2		68	0.4
	3	2.9		69	0
	5	0		70	0
	6	2.0		71	0
	8	2.3		72	0
	9	8.0		73	7.1
	10	5.0		74	5.0
	12	0		75	8.1
	13	0		76	-3.5
	14	4.0		77	0
	16	1.4		78	3.2
	17	1.5		79	3.2
	18	0		80	0
	19	0	IC501	1	0.3
	20	3.8		3	-12.6
	21	3.8		5	0.2
	22	5.0		6	13.9
	26	0		7	0.3
	28	3.5	IC531	1	1.4
	29	3.6		2	2.3
	30	1.9		3	1.8
	31	0.3		5	2.4
	32	3.6		6	1.6
	34	1.9		7	6.4
	35	1.4	IC601	1	-80.4
	36	3.9		2	-80.5
	38	1.8		3	-80.2
	40	3.3		4	-80.2
	42	3.3		5	-81.5
	43	1.4		6	-81.6
	45	0		7	-77.8
	46	0		9	-81.8
	47	3.6		10	-76
	48	2.8		11	-81.9
	49	2.3		12	-79.4
	50	0.2		14	16.5
	51	2.5		15	11
	52	2.5		16	14.4
	53	2.5		18	86.4
	54	2.1	IC1201	1	11
	55	5.2		3	4.9
	56	3.0		5	0
	57	3.1		6	0
	58	3.1		7	11.3
	59	3.2		9	0.3
	62	0		10	0
	63	0		12	0
	64	0		14	11.35
	65	0			

Semiconductor Voltage Table

Ref	(e)	(b)	(c)	Ref	(e)	(b)	(c)
Q013	0	0.7	0	Q604	0	0	2.5
Q016	0	0	3.3	Q608	0	0	5.6
Q212	0	0.7	0	Q609	5.6	5.6	0
Q401	4.8	4.2	1.8				
Q411	1.1	1.7	4.2	Ref	(s)	(g)	(d)
Q601	5.6	4.8	5.3	Q606	10.9	14.5	86.7
Q602	14.2	5.1	8	Q607	-82.4	-79.9	10.9
Q603	8	8	0	Q535	0	2.5	95.2

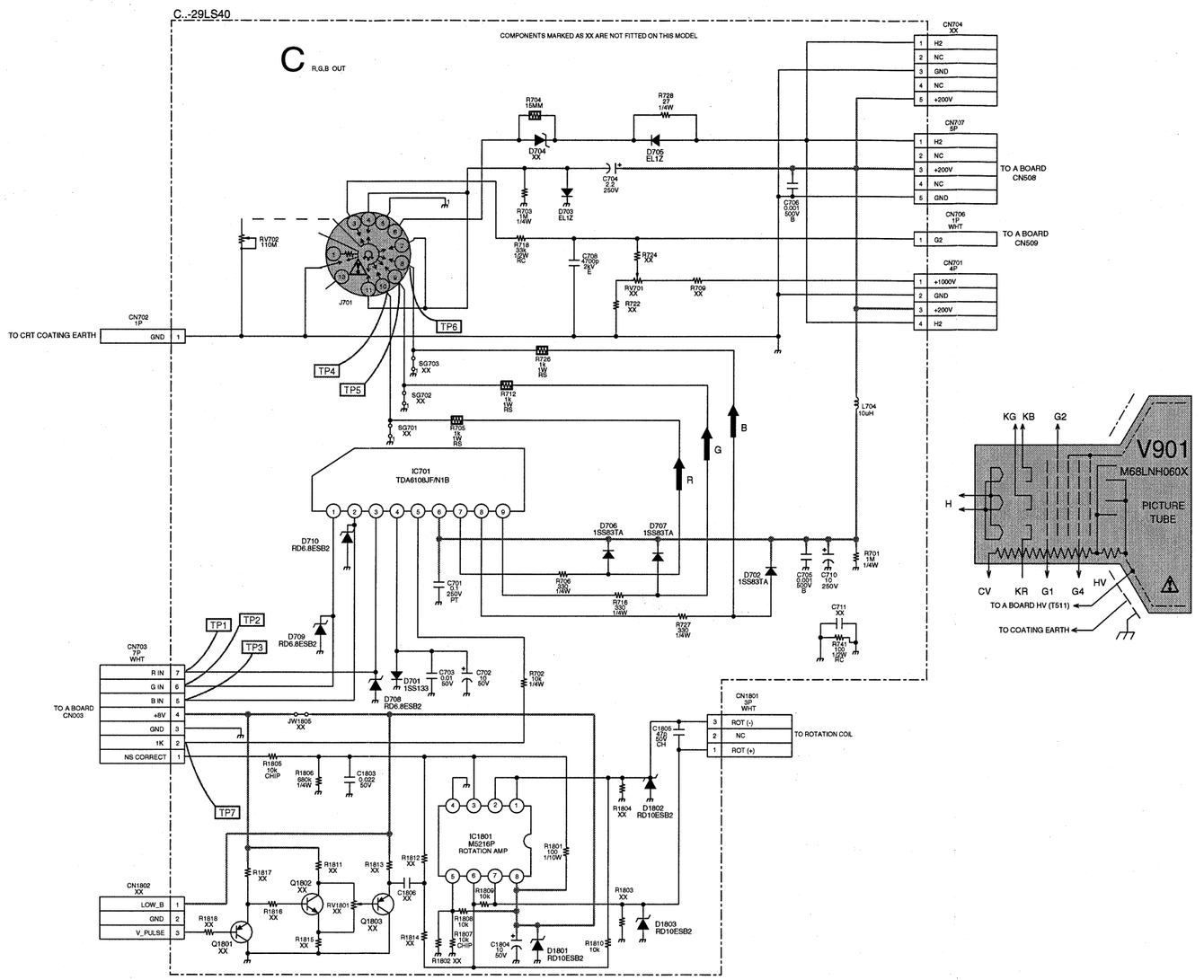
NOTE:
Portions of the circuit marked as shown are high voltage areas. Use care to prevent electric shock during inspection or repair.

~ A Printed Wiring Board Conductor Side ~

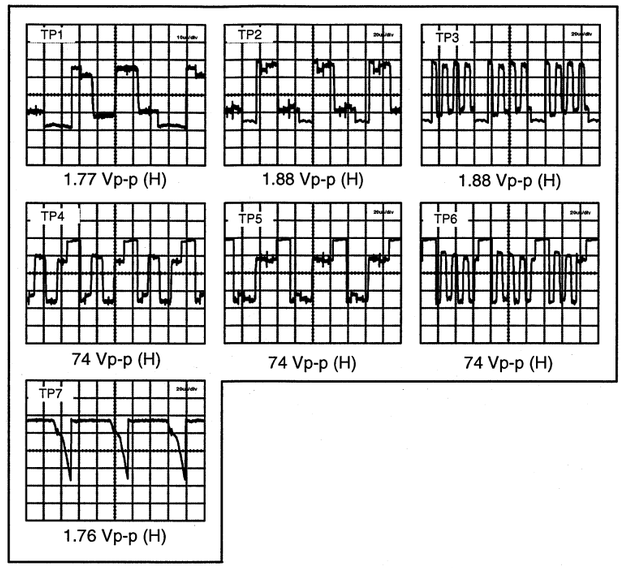
Semiconductor Location Table

DIODE																TRANSISTOR							
D001	I - 2	D013	M - 1	D103	E - 1	D236	D - 3	D411	C - 3	D424	M - 2	D505	M - 2	D538	E - 6	D612	G - 5	D625	H - 6	Q013	I - 3	Q532	D - 4	Q609	J - 6	IC004	H - 2
D002	I - 3	D016	J - 2	D104	E - 2	D239	D - 3	D412	D - 3	D427	A - 4	D506	D - 4	D539	B - 5	D613	J - 6	D627	K - 7	Q014	L - 1	Q533	A - 6	Q1210	H - 3	IC401	I - 3
D003	K - 2	D018	I - 3	D105	A - 1	D402	E - 3	D413	C - 3	D428	C - 3	D507	M - 2	D541	F - 5	D614	K - 8	D628	L - 7	Q049	J - 3	Q535	B - 4	Q1211	H - 3	IC501	E - 10
D004	M - 4	D020	M - 8	D106	B - 1	D403	B - 2	D414	B - 2	D429	D - 3	D512	D - 8	D573	F - 5	D615	H - 5	D629	L - 7	Q202	E - 3	Q601	K - 5	Q1230	B - 3	IC531	F - 4
D006	M - 8	D021	L - 2	D107	B - 2	D404	I - 3	D418	B - 3	D435	A - 2	D513	D - 9	D601	I - 9	D618	H - 6	D631	L - 7	Q203	F - 2	Q602	G - 5	Q1231	B - 3	IC601	F - 10
D007	K - 1	D022	J - 2	D207	F - 3	D405	B - 2	D419	E - 2	D436	A - 2	D514	C - 9	D602	J - 5	D619	H - 6	D632	K - 5	Q212	I - 5	Q603	G - 5	Q1232	B - 3	IC602	F - 7
D008	L - 3	D035	K - 3	D210	I - 5	D406	B - 2	D420	B - 2	D501	D - 9	D534	E - 5	D604	F - 9	D620	M - 5	D633	L - 5	Q401	C - 1	Q604	H - 5	Q1233	C - 2	IC604	H - 5
D010	G- 2	D036	K - 3	D211	I - 5	D407	B - 2	D421	C - 2	D502	D - 9	D535	E - 6	D608	F - 8	D621	J - 5	D638	I - 6	Q409	G - 1	Q606	G - 10	IC'S		IC608	L - 5
D011	F - 2	D051	L - 3	D212	I - 5	D408	B - 2	D422	C - 2	D503	I - 2	D536	B - 6	D610	J - 5	D622	H - 7	D640	L - 5	Q411	D - 2	Q607	G - 9	IC001	K - 2	IC609	L - 6
D101	B - 1	D228	E - 4	D410	C - 2	D423	C - 2	D504	I - 2	D537	C - 4	D611	G - 5	D623	J - 5							Q608	J - 6	IC002	M - 8	IC1201	H - 4

~ C Board Schematic Diagram [RGB Out] ~



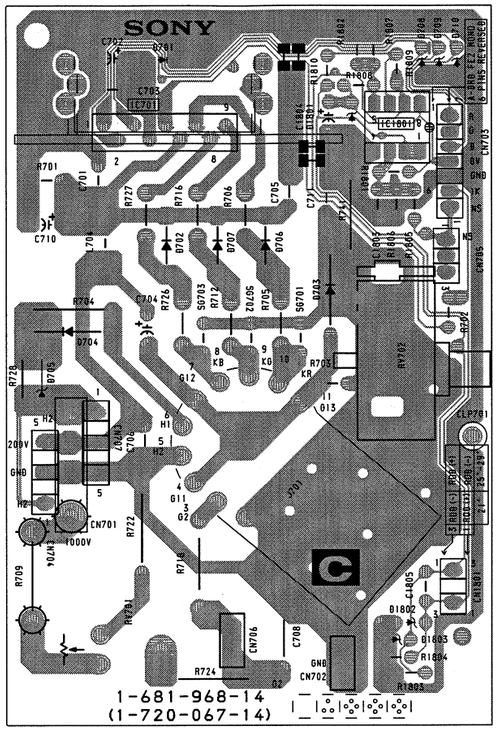
~ C Board Waveforms ~



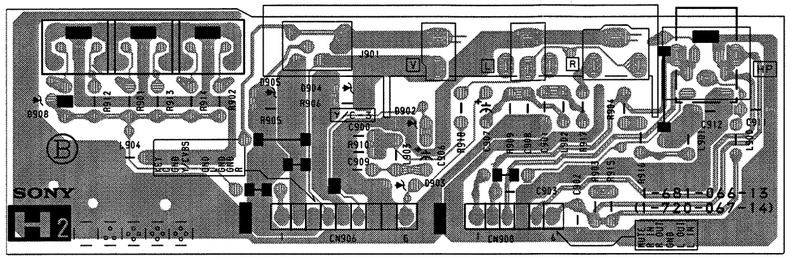
~ C Board Semiconductor Voltage Table ~

Ref No	Pin No	Voltage (V)	Ref No	Pin No	Voltage (V)
IC1701	1	3.1	IC1801	1	1.3
	2	2.1		2	1.3
	3	3.0		3	1.4
	5	5.5		5	4.1
	7	131		6	4.1
	8	123		7	7.0
	9	124.6		8	8.0

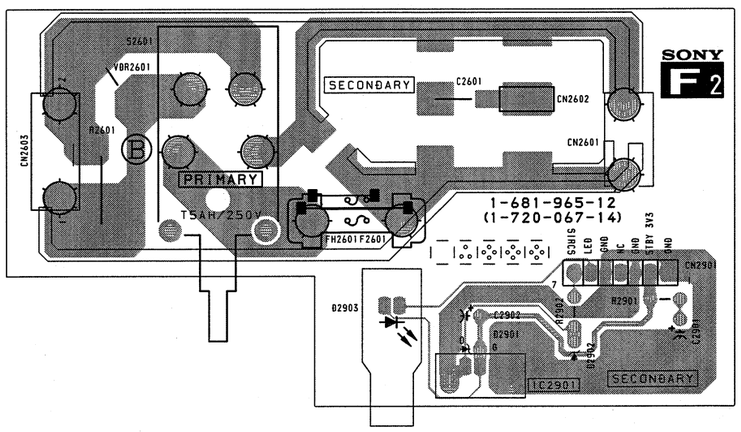
~ C Printed Wiring Board Conductor Side ~



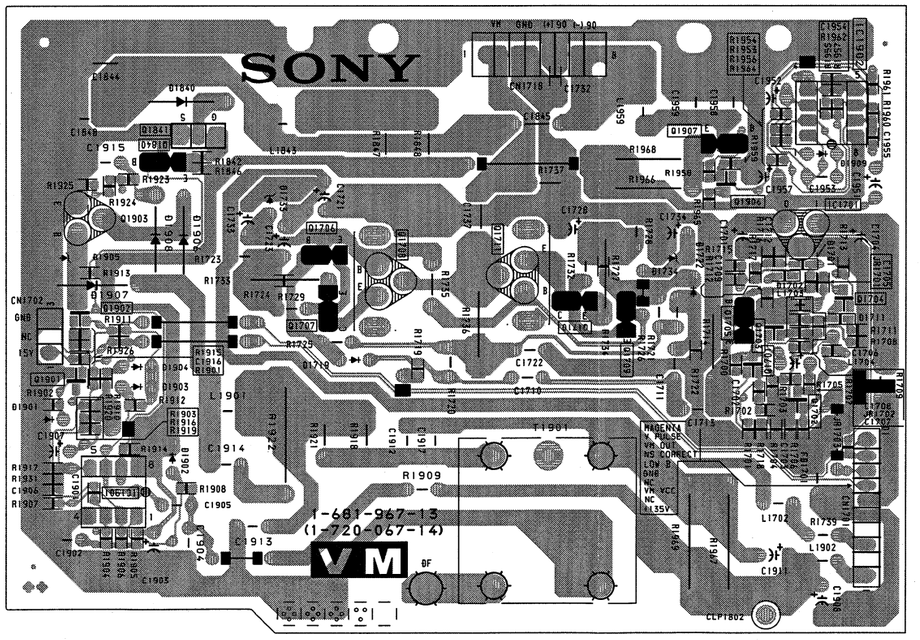
~ H2 Printed Wiring Board Conductor Side ~



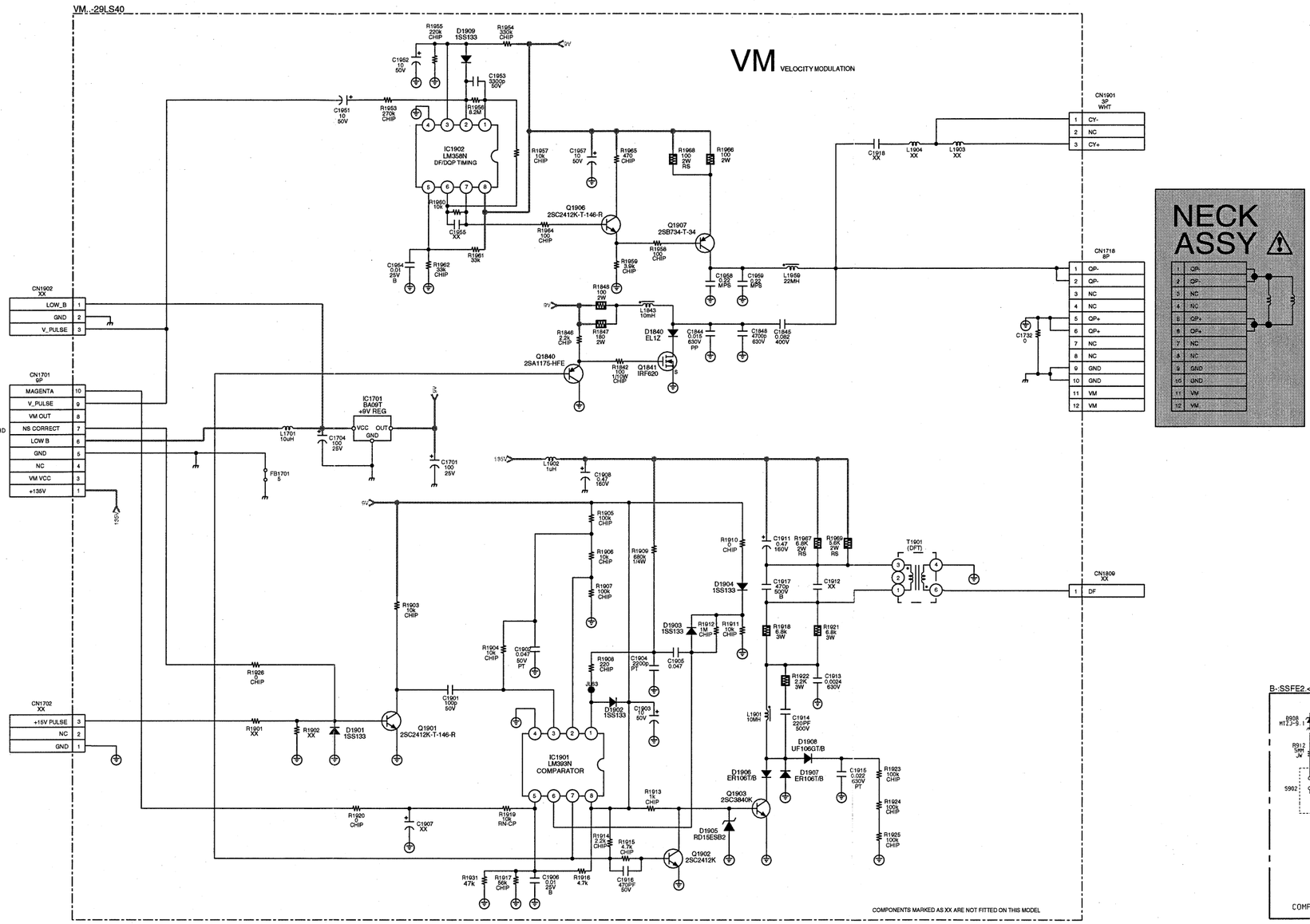
~ F2 Printed Wiring Board Conductor Side ~



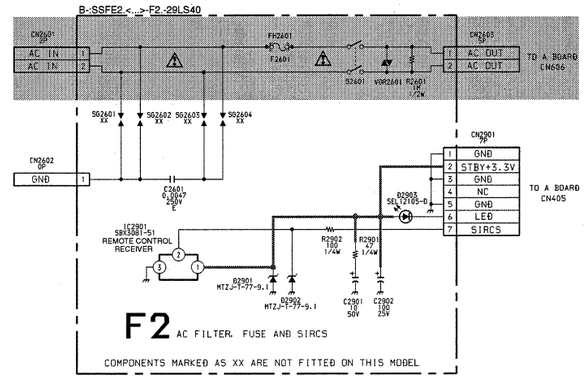
~ VM Printed Wiring Board Conductor Side ~



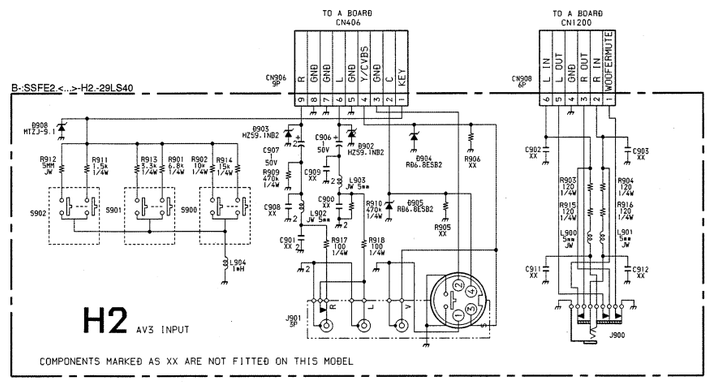
~ VM Board Schematic Diagram [Velocity Modulation] ~



~ F2 Board Schematic Diagram [AC Filter, Fuse & SIRCS] ~

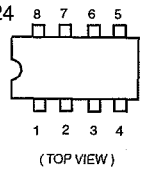


~ H2 Board Schematic Diagram [AV3 Input] ~

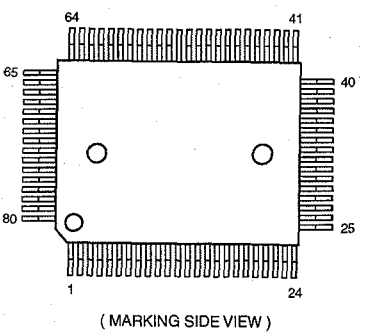


5-4. SEMICONDUCTORS

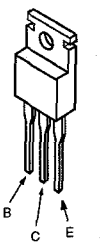
LM358N
LM393DT
LM393N
M5216P
TDA2822M
TEA2124



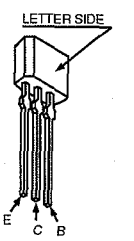
TDA9394H



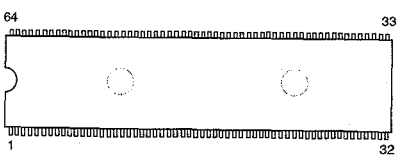
IRF614-005
IRF614-037
IRF620



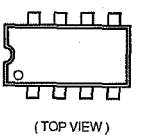
2SA933AS-QRT
2SAG33ASQT
2SA933AS-RT
2SC1740S-RT



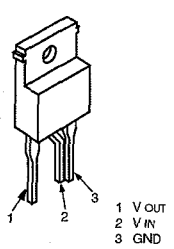
MSP3410G-PP-B8
MSP3411G-PP-B9



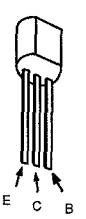
TOP209P



SE-135N
SE135N-LF4



BF421-AMMO
2SA1091-O



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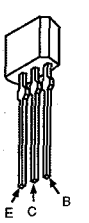
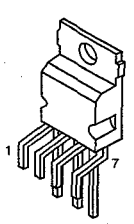
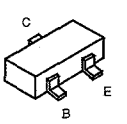


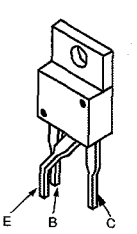
STV9379



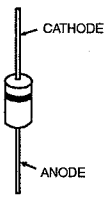
DTA144ESA
DTA144ESA-TP
DTC114EKA-T146
DTC143TKA-T146
DTC144EKA-T-146R
2SA1037K-T-146-R
R2SA1162-G
2SA1037AK-T-146-QR
2SD601A-QTX
2SC1623-L5-L6
2SC2412K-QR
2SC2412K-T-146-QR
2SC2412K-T-146-R



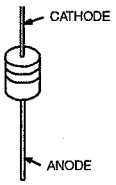
2SK2251-01-F19



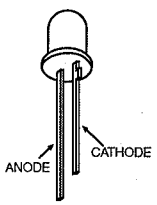
AK04-V1
AU-01Z-V1
BYD33G
BYD33G-AMMO
DINL20-TA
DINL20-U-TA2
DINL40-U-TR2
ERB44-06TP1
EGP20G
EG-1Z-V1
EL1Z
ERD28-06S
ERD28-06S
ERC06-15SL
FMN-G12S
GP08DPKG23
RGP10GPKG23
RG15GPKG23
RG1CLF-B1
RU-3AM
RU3YX-LF-C4
RU3YX-V1
RU-4AM-T3
1SS292T-77



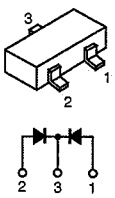
ERA81-004TP1
ERA83-006
MTZJ-3.6A
MTZJ-T-77-2.2A
HZS9.INBZ
MTZJ-T-77-3.6B
MTZJ-T-77-4.7B
MTZJ-T-77-5.1B
MTZJ-T-77-5.6B
MTZJ-T-77-6.8A
MTZJ-T-77-8.2B
MTZJ-T-77-7.5B
MTZJ-T-77-9.1
MTZJ-T-77-9.1B
MTZJ-T-77-10
MTZJ-T-72-10A
MTZJ-T-72-10B
MTZJ-T-77-15B
MTZJ-T-77-33A
MTZJ-33C
MTZJ-7.5B
P6KE200ASY
RD3.9ES-B2
RD7.5ESB2
RD9.1ES-B3
RD10ESB2
RD15ES-T1B2
1SS119-25TD
1SS133T-77



SLA-570KT3F



DAN202K
DAN202K-T146
MA8330-TX



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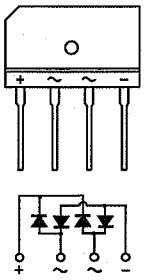
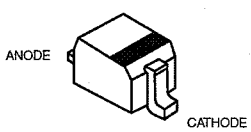
RD12SB2
UDZS-TE-17-4.7B
UDZS-TE-17-5.6B
UDZS-TE-17-6.8B
UDZS-TE-17-9.1B
UDZ-TE-17-22B

D4SB60L-F





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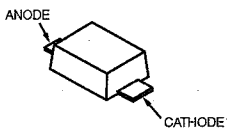
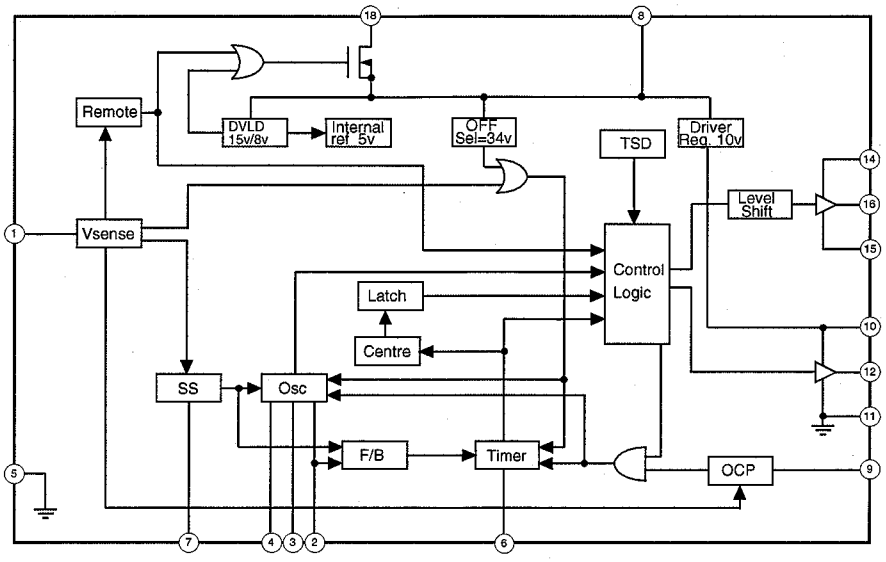
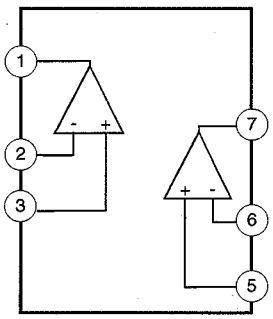


5-5 IC BLOCK DIAGRAMS

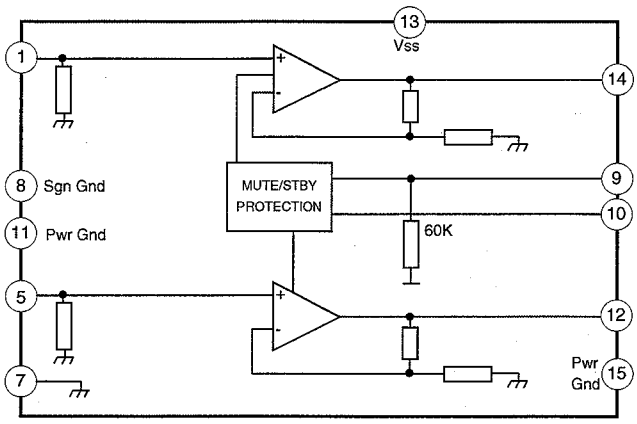
A BOARD IC601 MCZ3001D



A BOARD IC401/IC531 LM393DT



A BOARD IC1201 TDA7495S



SECTION 6
EXPLODED VIEWS

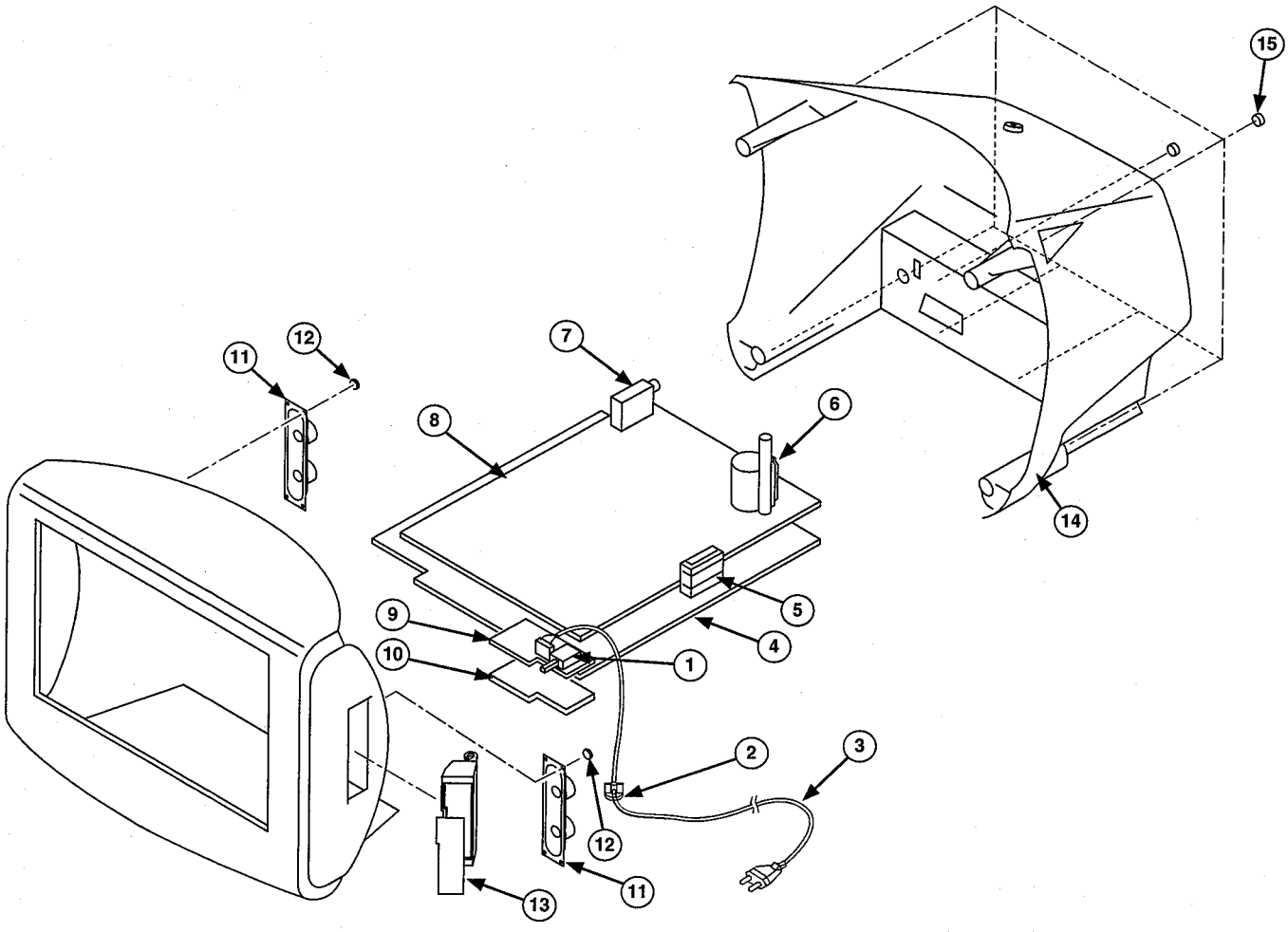
Note : Les composants indentifies par une trame et par une marque ⚠ sonte d'une importance critique pour la securite. Ne les remplacer que par des pieces du numero specifie.

Note : The components identified by shading and marked ⚠ are critical for safety. Replace only with the part numbers specified in the parts list.

NOTE :

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remarks column.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

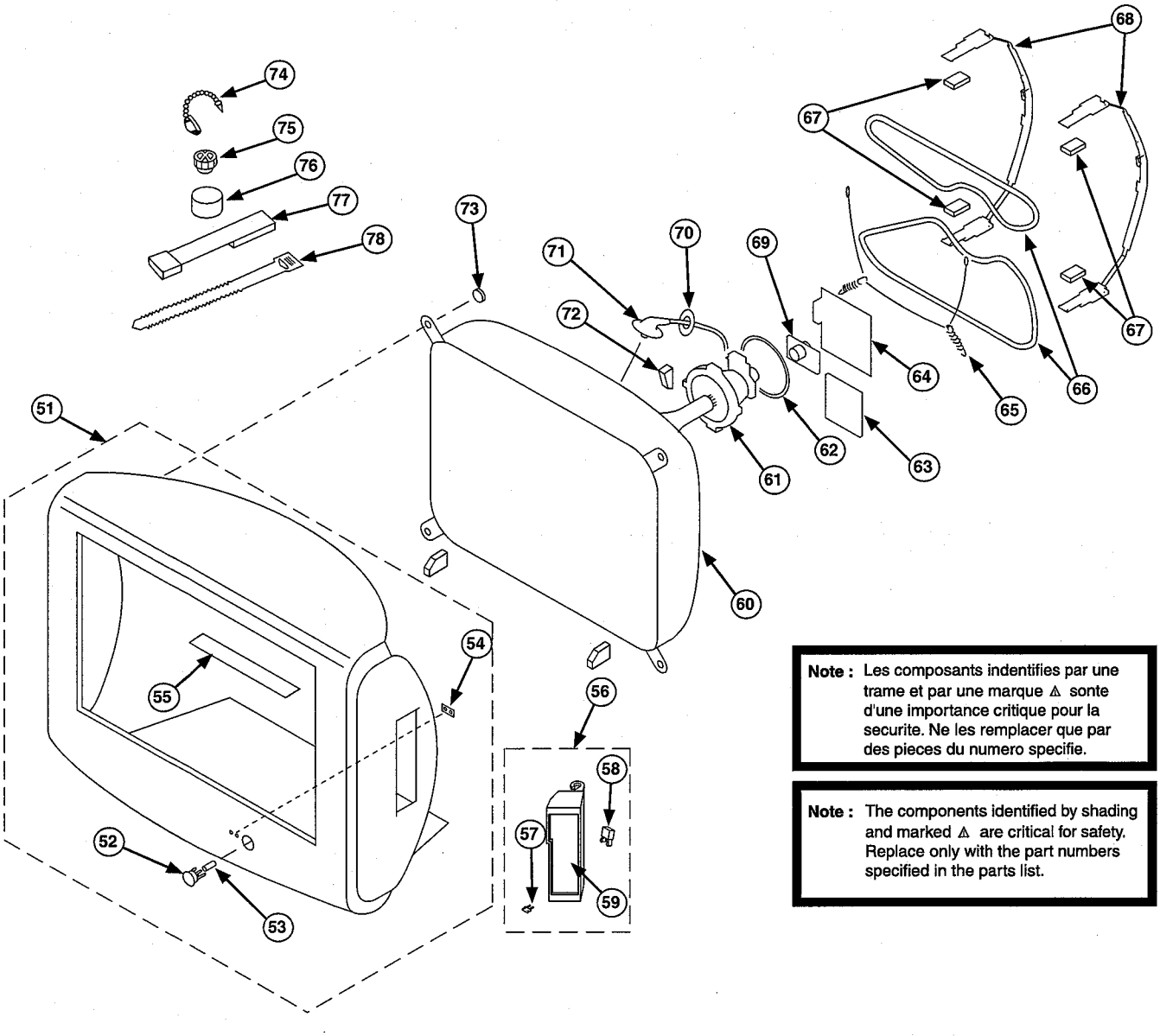
6-1. CHASSIS



REF.NO.		PART.NO	DESCRIPTION	REMARK
1	⚠	1-571-433-21	SWITCH, PUSH (AC POWER)	
2		*4-202-531-01	AC CORD LOCK (SC)	
3	⚠	1-765-286-11	CORD, POWER	
4		*4-206-048-02	BRACKET, MAIN	
5		1-424-733-11	COIL, PFC CHOKE 65MMH	
6	⚠	1-453-308-51	TRANSFORMER ASSY, FLYBACK (NX-4521//Z2B4)	
7		8-598-535-20	FRONTEND BTF-EF411 (KV-29LS40B)	
		8-598-533-10	FRONTEND BTF-EC411 (KV-29LS40E/K)	

REF.NO.	PART.NO	DESCRIPTION	REMARK
8	*A-1052-332-A	A BOARD, COMPLETE (KV-29LS40B)	
	*A-1052-327-A	A BOARD, COMPLETE (KV-29LS40E/K)	
9	*A-1624-104-A	F2 BOARD, COMPLETE	
10	*4-206-055-03	BRACKET, F2	
11	1-529-408-11	SPEAKER (4.2x24CM)	
12	4-058-870-01	SCREW (4x16), W(+) P TAPPING	
13	*A-1646-239-A	H2 BOARD, COMPLETE	
14	4-205-945-21	REAR COVER	
15	7-685-663-79	SCREW, +BVTP 4x16 TYPE 2 IT-3	

6-2. PICTURE TUBE



Note : Les composants indentifies par une trame et par une marque ⚠ sonte d'une importance critique pour la securite. Ne les remplacer que par des pieces du numero specifie.

Note : The components identified by shading and marked ⚠ are critical for safety. Replace only with the part numbers specified in the parts list.

REF.NO.		PART.NO	DESCRIPTION	REMARK
51		X-2021-105-1	BEZNET ASSY	52-55
52		4-205-948-03	POWER BUTTON	
53		4-204-426-01	SPRING	
54		4-205-375-01	GUIDE, LIGHT	
55		4-204-865-21	SHEET BLOTTING	
56		*X-4200-712-3	DOOR ASSY	57-59
57		4-047-464-01	CATCHER, PUSH	
58		4-205-682-01	DAMPER	
59		4-205-946-02	DOOR	
60	⚠	8-735-169-05	PICTURE TUBE (M68LNH060X)	
61	⚠	8-451-494-31	DEFLECTION YOKE (Y29RSA-S)	
62		1-452-896-11	COIL, NA ROTATION (RT-200)	
63		*A-1645-045-A	VM BOARD, COMPLETE	
64		*A-1639-019-A	C BOARD, COMPLETE	
65		4-369-318-21	SPRING, TENSION	
66	⚠	1-416-654-21	COIL, DEMAGNETIC	
67		*4-203-390-11	CUSHION, DGC	
68		*4-204-768-02	HOLDER, DGC (29")	
69	⚠	8-453-011-11	NECK ASSY, NA299-M	
70		*4-203-022-01	HOLDER, HV	
71	⚠	1-251-537-22	CAP ASSY, HIGH VOLTAGE	
72		3-704-495-03	SPACER, DY	
73		4-046-765-12	SCREW, TAPPING 7 + CROWN WASHER	
74		4-308-870-00	CLIP, LEAD WIRE	
75		1-452-094-00	MAGNET, ROTATABLE DISK; 15MM Ø	
76		1-452-032-00	MAGNET, DISK; 10MM Ø	
77		X-4387-214-1	PERMALLOY ASSY, CORRECTION	
78		3-701-007-00	BAND, BINDING	

SECTION 7
ELECTRICAL PARTS LIST

PARTS LISTING TABLE OF CONTENTS

		Page
A BOARD COMMON Parts List :	Parts common to all models listed in this manual	38
A BOARD VARIANT Parts List :	PParts that belong only to the model specified	
Model		
KV-29LS40B	.....	45
KV-29LS40E	.....	45
KV-29LS40K	.....	45
F2 BOARD COMPLETE Parts List :	.....	45
C BOARD COMPLETE Parts List :	.....	45
VM BOARD COMPLETE Parts List :	.....	46
H2 BOARD COMPLETE Parts List :	.....	47
MISCELLANEOUS :	.....	48
ACCESSORIES AND PACKAGING MATERIALS :	.....	48
REMOTE COMMANDER:	.....	48

Note : Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
Parts indicated (XX) on the Schematic Diagram are not used in this model and therefore do not appear in the Parts List.

REF.NO.	PART.NO	DESCRIPTION	REMARK
* A-1052-332-A	A Board Complete (KV-29LS40B)		
* A-1052-327-A	A Board Complete (KV-29LS40E/K)		
A Board Common Parts			
	4-382-854-01	SCREW (M3X8), P, SW (+)	
	4-382-854-01	SCREW (M3X8), P, SW (+)	
	< CAPACITOR >		
C002	1-163-233-91	CERAMIC CHIP 18PF	5.00% 50V
C004	1-163-037-11	CERAMIC CHIP 0.022UF	10.00% 50V
C005	1-126-925-91	ELECT 470UF	20.00% 10V
C006	1-163-233-91	CERAMIC CHIP 18PF	5.00% 50V
C009	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C010	1-164-005-11	CERAMIC CHIP 0.47UF	25V
C011	1-163-005-91	CERAMIC CHIP 470PF	10.00% 50V
C012	1-126-963-11	ELECT 4.7UF	20.00% 50V
C013	1-162-970-11	CERAMIC CHIP 0.01UF	10.00% 25V
C014	1-162-970-11	CERAMIC CHIP 0.01UF	10.00% 25V
C015	1-162-970-11	CERAMIC CHIP 0.01UF	10.00% 25V
C018	1-162-970-11	CERAMIC CHIP 0.01UF	10.00% 25V
C020	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C022	1-126-925-91	ELECT 470UF	20.00% 10V
C025	1-126-935-11	ELECT 470UF	20.00% 16V
C026	1-162-970-11	CERAMIC CHIP 0.01UF	10.00% 25V
C027	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C028	1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V
C030	1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V
C033	1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V
C035	1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V
C036	1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V
C037	1-136-244-11	FILM 0.1UF	2.00% 50V
C038	1-163-038-91	CERAMIC CHIP 0.1UF	25V
C039	1-164-505-11	CERAMIC CHIP 2.2UF	16V
C040	1-163-017-00	CERAMIC CHIP 0.0047UF	10.00% 50V
C042	1-162-625-11	CERAMIC CHIP 0.0047UF	5.00% 50V
C043	1-163-037-11	CERAMIC CHIP 0.022UF	10.00% 50V
C044	1-164-346-11	CERAMIC CHIP 1UF	16V
C045	1-164-489-11	CERAMIC CHIP 0.22UF	10.00% 16V
C046	1-163-037-11	CERAMIC CHIP 0.022UF	10.00% 50V
C047	1-126-935-11	ELECT 470UF	20.00% 16V
C053	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C055	1-126-960-11	ELECT 1UF	20.00% 50V
C100	1-126-933-11	ELECT 100UF	20.00% 16V
C103	1-126-965-91	ELECT 22UF	20.00% 50V
C105	1-162-970-11	CERAMIC CHIP 0.01UF	10.00% 25V
C106	1-126-933-11	ELECT 100UF	20.00% 16V
C112	1-162-970-11	CERAMIC CHIP 0.01UF	10.00% 25V
C211	1-162-970-11	CERAMIC CHIP 0.01UF	10.00% 25V
C213	1-216-295-91	SHORT CHIP 0	
C214	1-163-253-11	CERAMIC CHIP 120PF	5.00% 50V
C215	1-163-084-00	CERAMIC CHIP 1.5PF	0.25PF 50V
C216	1-163-117-00	CERAMIC CHIP 100PF	5.00% 50V
C217	1-163-084-00	CERAMIC CHIP 1.5PF	0.25PF 50V
C218	1-216-295-91	SHORT CHIP 0	
C221	1-163-109-00	CERAMIC CHIP 47PF	5.00% 50V
C222	1-163-117-00	CERAMIC CHIP 100PF	5.00% 50V
C223	1-126-965-91	ELECT 22UF	20.00% 50V
C224	1-163-117-00	CERAMIC CHIP 100PF	5.00% 50V
C225	1-126-157-11	ELECT 10UF	20.00% 16V
C226	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C227	1-163-117-00	CERAMIC CHIP 100PF	5.00% 50V
C228	1-126-965-91	ELECT 22UF	20.00% 50V
C229	1-163-017-00	CERAMIC CHIP 0.0047UF	10.00% 50V
C230	1-164-336-11	CERAMIC CHIP 0.33UF	25V
C232	1-126-157-11	ELECT 10UF	20.00% 16V
C233	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C234	1-107-823-11	CERAMIC CHIP 0.47UF	10.00% 16V
C235	1-164-005-11	CERAMIC CHIP 0.47UF	25V
C236	1-126-157-11	ELECT 10UF	20.00% 16V
C237	1-126-965-91	ELECT 22UF	20.00% 50V
C238	1-163-117-00	CERAMIC CHIP 100PF	5.00% 50V
C239	1-126-157-11	ELECT 10UF	20.00% 16V
C242	1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V
C245	1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V
C401	1-126-964-11	ELECT 10UF	20.00% 50V
C404	1-162-970-11	CERAMIC CHIP 0.01UF	10.00% 25V
C405	1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V
C407	1-164-346-11	CERAMIC CHIP 1UF	16V
C408	1-127-715-91	CERAMIC CHIP 0.22UF	10% 16V
C409	1-126-964-11	ELECT 10UF	20.00% 50V
C410	1-162-970-11	CERAMIC CHIP 0.01UF	10.00% 25V
C411	1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V
C412	1-164-346-11	CERAMIC CHIP 1UF	16V
C414	1-164-346-11	CERAMIC CHIP 1UF	16V
C415	1-164-346-11	CERAMIC CHIP 1UF	16V
C416	1-126-964-11	ELECT 10UF	20.00% 50V
C417	1-162-970-11	CERAMIC CHIP 0.01UF	10.00% 25V
C418	1-164-346-11	CERAMIC CHIP 1UF	16V
C419	1-162-964-11	CERAMIC CHIP 0.001UF	10.00% 50V
C423	1-127-715-91	CERAMIC CHIP 0.22UF	10% 16V
C424	1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V
C426	1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V
C427	1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V
C428	1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V
C429	1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V
C430	1-102-114-00	CERAMIC 470PF	10.00% 50V
C435	1-163-017-00	CERAMIC CHIP 0.0047UF	10.00% 50V
C436	1-163-017-00	CERAMIC CHIP 0.0047UF	10.00% 50V
C437	1-164-346-11	CERAMIC CHIP 1UF	16V
C438	1-164-346-11	CERAMIC CHIP 1UF	16V

Note : The components identified by shading and marked △ are critical for safety. Replace only with the part numbers specified in the parts list.

A

REF.NO.	PART.NO	DESCRIPTION	REMARK
C445	1-126-964-11	ELECT 10UF	20.00% 50V
C446	1-126-964-11	ELECT 10UF	20.00% 50V
C447	1-162-970-11	CERAMIC CHIP 0.01UF	10.00% 25V
C449	1-126-025-11	RES CHIP 100UF	5.00% 1/10W
C501	1-126-968-11	ELECT 100UF	20.00% 50V
C502	1-163-038-91	CERAMIC CHIP 0.1UF	25V
C503	1-126-968-11	ELECT 100UF	20.00% 50V
C504	1-106-220-00	MYLAR 0.1UF	10.00% 100V
C505	1-137-194-81	FILM 0.47UF	5.00% 50V
C506	1-162-970-11	CERAMIC CHIP 0.01UF	10.00% 25V
C508	1-163-035-00	CERAMIC CHIP 0.047UF	50V
C509	1-107-364-11	MYLAR 0.01UF	10.00% 200V
C510	1-163-005-91	CERAMIC CHIP 470PF	10.00% 50V
C513	1-107-662-11	ELECT 22UF	20.00% 350V
C515	1-104-666-11	ELECT 220UF	20.00% 25V
C517	1-115-781-11	ELECT 220UF	20.00% 25V
C518	1-106-375-12	MYLAR 0.022UF	5.00% 200V
C519	1-163-275-11	CERAMIC CHIP 0.001UF	5.00% 50V
C520	1-163-038-91	CERAMIC CHIP 0.1UF	25V
C522	1-130-495-00	MYLAR 0.1UF	5.00% 50V
C525	1-123-024-21	ELECT 33UF	160V
C530	1-162-970-11	CERAMIC CHIP 0.01UF	10.00% 25V
C531	1-126-964-11	ELECT 10UF	20.00% 50V
C532	1-163-037-11	CERAMIC CHIP 0.022UF	10.00% 50V
C535	1-163-233-91	CERAMIC CHIP 18PF	5.00% 50V
C536	1-117-813-21	FILM 0.75UF	5.00% 250V
C537	1-106-351-00	MYLAR 0.0022UF	99% 200V
C538	1-165-319-11	CERAMIC CHIP 0.1UF	50V
C539	1-111-230-11	ELECT 1UF	20.00% 160V
C540	1-136-206-11	MYLAR 0.033UF	5.00% 630V
C541	1-106-383-00	MYLAR 0.047UF	10.00% 200V
C542	1-161-754-00	CERAMIC 0.001UF	10.00% 2KV
C543	1-162-134-11	CERAMIC 470PF	10.00% 2KV
C545	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C546	1-130-118-00	FILM 0.051UF	5.00% 400V
C547	1-115-521-11	FILM 0.82UF	5.00% 250V
C548	1-162-134-11	CERAMIC 470PF	10.00% 2KV
C550	1-107-638-11	ELECT 33UF	20.00% 160V
C552	1-102-212-00	CERAMIC 820PF	10.00% 500V
C553	1-137-417-11	MYLAR 0.015UF	10.00% 100V
C555	1-127-717-11	FILM 19000PF	3% 1.2KV
C570	1-126-961-11	ELECT 2.2UF	20.00% 50V
C580	1-162-970-11	CERAMIC CHIP 0.01UF	10.00% 25V
C582	1-163-255-11	CERAMIC CHIP 150PF	5.00% 50V
C583	1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V
C601 △	1-137-999-11	FILM 0.1UF	275V
C603 △	1-119-899-51	CERAMIC 1000PF	10.00% 250V
C604 △	1-119-899-51	CERAMIC 1000PF	10.00% 250V
C605	1-115-785-11	ELECT 470UF	20.00% 25V
C606	1-117-751-11	ELECT(BLOCK) 220UF	20.00% 450V
C607	1-126-964-11	ELECT 10UF	20.00% 50V
C608	1-126-963-11	ELECT 4.7UF	20.00% 50V
C610	1-126-941-11	ELECT 470UF	20.00% 25V
C611	1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V
C612 △	1-104-571-91	CERAMIC 0.0015UF	10.00% 2KV
C613 △	1-104-571-91	CERAMIC 0.0015UF	10.00% 2KV
C614 △	1-161-964-51	CERAMIC 0.0047UF	250V
C615	1-115-339-11	CERAMIC CHIP 0.1UF	10.00% 50V
C616	1-165-127-11	CERAMIC 470PF	10.00% 500V
C617	1-165-127-11	CERAMIC 470PF	10.00% 500V
C618	1-126-949-11	ELECT 220UF	20.00% 35V
C619	1-165-127-51	CERAMIC 470PF	10.00% 500V
C620	1-137-990-22	FILM 33000PF	3% 800V
C621	1-165-127-51	CERAMIC 470PF	10.00% 500V
C622 △	1-104-571-91	CERAMIC 0.0015UF	10.00% 2KV
C623 △	1-104-571-91	CERAMIC 0.0015UF	10.00% 2KV
C624	1-126-935-11	ELECT 470UF	20.00% 16V
C626	1-126-967-11	ELECT 47UF	20.00% 50V
C627	1-126-964-11	ELECT 10UF	20.00% 50V
C628	1-126-963-11	ELECT 4.7UF	20.00% 50V
C629	1-165-127-11	CERAMIC 470PF	10.00% 500V
C630	1-107-641-11	ELECT 220UF	20.00% 160V
C631	1-126-942-61	ELECT 1000UF	20.00% 25V
C632	1-126-964-11	ELECT 10UF	20.00% 50V
C633	1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V
C635	1-136-497-81	FILM 0.1UF	5.00% 50V
C636	1-136-479-11	FILM 0.001UF	5.00% 100V
C637	1-126-967-11	ELECT 47UF	20.00% 50V
C638	1-107-679-91	ELECT 10UF	20.00% 450V
C639	1-104-665-11	ELECT 100UF	20.00% 25V
C640	1-126-947-11	ELECT 47UF	20.00% 35V
C641	1-115-785-11	ELECT 470UF	20.00% 25V
C642	1-104-665-11	ELECT 100UF	20.00% 25V
C643	1-165-127-11	CERAMIC 470PF	10.00% 500V
C645	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C649	1-163-038-91	CERAMIC CHIP 0.1UF	25V
C657	1-126-952-11	ELECT 1000UF	20.00% 35V
C1201	1-126-952-11	ELECT 1000UF	20.00% 35V
C1203	1-535-303-00	LEAD,JUMPER (5.0MM)	
C1207	1-126-960-11	ELECT 1UF	20.00% 50V
C1209	1-163-033-91	CERAMIC CHIP 0.022UF	50V
C1210	1-126-960-11	ELECT 1UF	20.00% 50V
C1211	1-163-033-91	CERAMIC CHIP 0.022UF	50V
C1213	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C1215	1-126-952-11	ELECT 1000UF	20.00% 35V
C1218	1-109-982-11	CERAMIC CHIP 1UF	10.00% 10V
C1219	1-104-666-11	ELECT 220UF	20.00% 25V
C1221	1-115-339-11	CERAMIC CHIP 0.1UF	10.00% 50V
C1228	1-126-952-11	ELECT 1000UF	20.00% 35V
C1229	1-163-001-11	CERAMIC CHIP 220PF	10.00% 50V

Note : The components identified by shading and marked ⚠ are critical for safety. Replace only with the part numbers specified in the parts list.

A

REF.NO.	PART.NO	DESCRIPTION	REMARK
C1230	1-163-001-11	CERAMIC CHIP 220PF	10.00% 50V
C1232	1-115-339-11	CERAMIC CHIP 0.1UF	10.00% 50V
C1235	1-126-960-11	ELECT 1UF	20.00% 50V
C1236	1-126-960-11	ELECT 1UF	20.00% 50V
		< CONNECTOR >	
CN001	* 1-816-976-51	PLUG, CONNECTOR 5P	
CN003	* 1-816-978-51	PLUG, CONNECTOR 7P	
CN405	* 1-816-978-51	PLUG, CONNECTOR 7P	
CN406	* 1-816-979-51	PLUG, CONNECTOR 8P	
CN501	1-580-798-11	CONNECTOR PIN (DY)	
CN506	1-695-915-11	TAB (CONTACT)	
CN508	* 1-816-976-51	PLUG, CONNECTOR 5P	
CN509	1-695-915-11	TAB (CONTACT)	
CN510	1-691-771-11	PLUG (MICRO CONNECTOR) 9P	
CN602 ⚠	1-508-765-13	PIN, CONNECTOR (5MM PITCH) 3P	
CN603 ⚠	* 1-508-786-00	PIN, CONNECTOR (5MM PITCH) 2P	
CN605 ⚠	* 1-691-960-11	PIN, CONNECTOR (PC BOARD) 3P	
CN606 ⚠	* 1-695-292-11	PIN, CONNECTOR (POWER)	
CN1200	* 1-816-977-51	PLUG, CONNECTOR 6P	
CN1201	* 1-816-975-51	PLUG, CONNECTOR 4P	
		< DIODE >	
D001	8-719-069-55	DIODE UDZSTE-175.6B	
D002	8-719-069-55	DIODE UDZSTE-175.6B	
D003	8-719-109-69	DIODE RD3.6ESB2	
D005	8-719-929-15	DIODE HZS9.1NB2	
D006	8-719-109-89	DIODE RD5.6ESB2	
D007	8-719-069-55	DIODE UDZSTE-175.6B	
D008	8-719-074-43	DIODE BAS316-115	
D010	8-719-074-43	DIODE BAS316-115	
D011	8-719-074-43	DIODE BAS316-115	
D013	8-719-109-69	DIODE RD3.6ESB2	
D014	1-216-295-91	SHORT CHIP 0	
D018	8-719-109-69	DIODE RD3.6ESB2	
D022	8-719-069-55	DIODE UDZSTE-175.6B	
D101	6-500-159-01	DIODE MA8330-M-TX	
D107	8-719-069-55	DIODE UDZSTE-175.6B	
D207	6-500-028-01	DIODE MM3Z9V1ST1	
D210	8-719-069-55	DIODE UDZSTE-175.6B	
D211	6-500-028-01	DIODE MM3Z9V1ST1	
D212	8-719-914-43	DIODE DAN202K	
D235	8-719-069-55	DIODE UDZSTE-175.6B	
D236	6-500-028-01	DIODE MM3Z9V1ST1	
D403	8-719-069-55	DIODE UDZSTE-175.6B	
D404	8-719-109-89	DIODE RD5.6ESB2	
D420	8-719-069-55	DIODE UDZSTE-175.6B	
D424	6-500-028-01	DIODE MM3Z9V1ST1	
D501	8-719-979-85	DIODE EGP20G	
D502	8-719-081-90	DIODE PDZ22B-115	
D503	8-719-069-55	DIODE UDZSTE-175.6B	
D504	8-719-074-43	DIODE BAS316-115	
D505	8-719-081-97	DIODE MMDL914T1	
D506	6-500-106-01	DIODE PG4003T/B	
D507	8-719-070-59	DIODE PDZ6.8B-115	
D512	8-719-302-43	DIODE EL1Z	
D513	8-719-979-85	DIODE EGP20G	
D514	8-719-979-85	DIODE EGP20G	
D534	8-719-302-43	DIODE EL1Z	
D535	8-719-908-03	DIODE GP08D	
D536	6-500-367-01	DIODE BY228RAS20-10	
D537	8-719-070-62	DIODE PDZ9.1B-115	
D538	8-719-908-03	DIODE GP08D	
D539	8-719-312-10	DIODE RU4AM-T3	
D540	6-500-106-01	DIODE PG4003T/B	
D541	1-216-295-91	SHORT CHIP 0	
D573	8-719-082-00	DIODE MM3Z4V7T1	
D601	8-719-510-53	DIODE D4SB60L	
D602	8-719-911-19	DIODE 1SS119-25	
D604	8-719-083-94	DIODE FUF4005	
D608	6-500-175-01	DIODE 1E3-TB	
D610	8-719-110-41	DIODE RD15ESB2	
D611	8-719-991-33	DIODE 1SS133T-77	
D612	8-719-991-33	DIODE 1SS133T-77	
D613	8-719-911-19	DIODE 1SS119-25	
D614	6-500-465-01	DIODE G2SBA60L-5700	
D618	8-719-312-92	DIODE RK14V1	
D619	8-719-312-92	DIODE RK14V1	
D620	8-719-109-85	DIODE RD5.1ESB2	
D621	8-719-109-89	DIODE RD5.6ESB2	
D623	8-719-911-19	DIODE 1SS119-25	
D625	6-500-246-01	DIODE FBIU4D7M1-B-4	
D627	6-500-175-01	DIODE 1E3-TB	
D628	8-719-083-49	DIODE P6KE200ASY	
D629	8-719-083-94	DIODE FUF4005	
D631	8-719-921-63	DIODE MTZJ-7.5B	
D632	6-500-175-01	DIODE 1E3-TB	
D633	8-719-109-69	DIODE RD3.6ESB2	
D638	6-500-069-01	DIODE FMW-2109LF654	
D640	8-719-921-63	DIODE MTZJ-7.5B	
D1204	8-719-069-55	DIODE UDZSTE-175.6B	
D1230	8-719-074-43	DIODE BAS316-115	
		< FERRITE BEAD >	
FB410	1-414-760-21	FERRITE 0UH	
FB411	1-414-760-21	FERRITE 0UH	
FB412	1-414-760-21	FERRITE 0UH	
FB601	1-469-578-11	FERRITE 1.1UH	
FB602	1-469-578-11	FERRITE 1.1UH	

Note : The components identified by shading and marked △ are critical for safety. Replace only with the part numbers specified in the parts list.

A

REF.NO.	PART.NO	DESCRIPTION	REMARK
FB603	1-412-911-11	FERRITE	0UH
FB604	1-469-578-11	FERRITE	1.1UH
FB605	1-469-578-11	FERRITE	1.1UH
FB606 △	1-412-911-11	FERRITE	0UH
FB607 △	1-412-911-11	FERRITE	0UH
	< FILTER >		
FL201	1-239-803-11	FILTER, EMI	
	< IC >		
IC001	6-702-097-02	IC TDA9394H/N1/5/1031	
IC004	8-759-675-65	IC M24C08-WMN6T(A)	
IC201	6-700-411-02	IC MSP3411G-PP-B8V3	
IC401	8-759-665-11	IC LM393DT	
IC501	8-759-696-71	IC STV9379A	
IC531	6-705-208-01	IC LM393DT	
IC601	8-759-670-30	IC MCZ3001D	
IC602	8-749-016-19	IC SE135N-LF4	
IC603	6-702-992-01	IC TA78M08S	
IC604	8-759-648-20	IC L7805CV/LSY	
IC608	8-759-591-02	IC L78L33ABZ-AP	
IC609	8-759-468-89	IC TOP209P	
IC1201	8-759-831-57	IC TDA7495S	
	< SOCKET >		
J401	* 1-766-296-41	CONNECTOR, DUAL SCART	
J404	1-793-987-11	JACK, PIN 2P	
	< COIL >		
L001	1-408-611-31	INDUCTOR	47UH
L004	1-408-611-31	INDUCTOR	47UH
L006	1-408-611-31	INDUCTOR	47UH
L027	1-216-295-91	SHORT CHIP	0
L101	1-412-534-31	INDUCTOR	56UH
L102	1-408-611-31	INDUCTOR	47UH
L103	1-412-002-31	INDUCTOR	4.7UH
L104	1-412-002-31	INDUCTOR	4.7UH
L201	1-535-303-00	LEAD, JUMPER	(5.0MM)
L203	1-408-602-31	INDUCTOR	8.2UH
L205	1-408-591-11	INDUCTOR	1UH
L206	1-535-303-00	LEAD, JUMPER	(5.0MM)
L207	1-408-591-11	INDUCTOR	1UH
L401	1-410-993-42	INDUCTOR	1UH
L403	1-410-993-42	INDUCTOR	1UH
L404	1-410-993-42	INDUCTOR	1UH
L405	1-535-303-00	LEAD, JUMPER	(5.0MM)
L406	1-535-303-00	LEAD, JUMPER	(5.0MM)
L410	1-216-025-11	RES-CHIP	100 5% 1/10W
L430	1-412-002-31	INDUCTOR	4.7UH
L446	1-216-295-91	SHORT CHIP	0
L448	1-216-295-91	SHORT CHIP	0
L501	1-414-187-11	INDUCTOR	47UH
L502	1-412-529-11	INDUCTOR	22UH
L503	1-412-521-31	INDUCTOR	4.7UH
L504	1-535-303-00	LEAD, JUMPER	(5.0MM)
L505	1-412-542-41	INDUCTOR	270UH
L507	1-412-533-21	INDUCTOR	47UH
L532	1-412-553-11	INDUCTOR	3.3MH
L533	1-406-989-21	INDUCTOR	10MH
L534	1-216-025-11	RES-CHIP	100 5% 1/10W
L535	1-419-633-21	INDUCTOR	10MH
L601	1-408-603-31	INDUCTOR	10UH
L602	1-408-611-31	INDUCTOR	47UH
L603	1-535-303-00	LEAD, JUMPER	(5.0MM)
L1201	1-535-303-00	LEAD, JUMPER	(5.0MM)
L1203	1-535-303-00	LEAD, JUMPER	(5.0MM)
	< PHOTOCOUPLER >		
PH601 △	8-749-010-64	PHOTO COUPLER PC123F2	
	< PROTECTOR MODULE >		
PS1201 △	1-533-597-31	IC LINK 5A 90V	
	< TRANSISTOR >		
Q013	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R	
Q049	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q202	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R	
Q203	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R	
Q212	8-729-422-33	TRANSISTOR 2SD601A-Q-TX	
Q401	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q409	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R	
Q411	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R	
Q532	8-729-053-33	TRANSISTOR IRF614-037	
Q533	6-550-669-01	TRANSISTOR ST2310DHI	
Q535	8-729-053-33	TRANSISTOR IRF614-037	
Q570	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R	
Q601	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q602	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q603	8-729-037-17	TRANSISTOR KRA104M-AT	
Q604	8-729-036-60	TRANSISTOR KRC104M-AT	
Q606	6-550-591-01	TRANSISTOR 2SK2543(LBS2SONY)	
Q607	6-550-591-01	TRANSISTOR 2SK2543(LBS2SONY)	
Q608	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q609	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q1230	8-729-027-56	TRANSISTOR DTC143TKA-T146	
Q1231	8-729-027-56	TRANSISTOR DTC143TKA-T146	
Q1232	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q1233	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	

A

REF.NO.	PART.NO	DESCRIPTION			REMARK
		< RESISTOR >			
JR4	1-216-295-91	SHORT CHIP	0		
JR7	1-216-295-91	SHORT CHIP	0		
JR10	1-216-295-91	SHORT CHIP	0		
JR17	1-216-295-91	SHORT CHIP	0		
JR21	1-216-818-11	METAL CHIP	560	5%	1/10W
JR24	1-216-295-91	SHORT CHIP	0		
JR25	1-216-295-91	SHORT CHIP	0		
JR204	1-216-296-11	SHORT CHIP	0		
JR206	1-216-295-91	SHORT CHIP	0		
JR209	1-216-295-91	SHORT CHIP	0		
JR211	1-216-296-11	SHORT CHIP	0		
JR401	1-216-295-91	SHORT CHIP	0		
JR419	1-216-022-00	RES-CHIP	75	5%	1/10W
JR508	1-216-295-91	SHORT CHIP	0		
JR601	1-216-295-91	SHORT CHIP	0		
JR609	1-216-295-91	SHORT CHIP	0		
JR610	1-216-295-91	SHORT CHIP	0		
R003	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R004	1-216-033-00	RES-CHIP	220	5%	1/10W
R005	1-216-041-00	RES-CHIP	470	5%	1/10W
R006	1-216-025-11	RES-CHIP	100	5%	1/10W
R007	1-216-025-11	RES-CHIP	100	5%	1/10W
R008	1-216-025-11	RES-CHIP	100	5%	1/10W
R009	1-216-049-11	RES-CHIP	1K	5%	1/10W
R010	1-216-049-11	RES-CHIP	1K	5%	1/10W
R011	1-216-295-91	SHORT CHIP	0		
R012	1-216-121-11	RES-CHIP	1M	5%	1/10W
R014	1-216-069-00	RES-CHIP	6.8K	5%	1/10W
R017	1-216-025-11	RES-CHIP	100	5%	1/10W
R018	1-208-820-11	METAL CHIP	39K	0.5%	1/10W
R020	1-216-077-91	RES-CHIP	15K	5%	1/10W
R022	1-216-089-91	RES-CHIP	47K	5%	1/10W
R023	1-216-035-00	RES-CHIP	270	5%	1/10W
R024	1-216-025-11	RES-CHIP	100	5%	1/10W
R025	1-216-025-11	RES-CHIP	100	5%	1/10W
R026	1-216-025-11	RES-CHIP	100	5%	1/10W
R027	1-216-025-11	RES-CHIP	100	5%	1/10W
R028	1-216-025-11	RES-CHIP	100	5%	1/10W
R029	1-216-061-91	RES-CHIP	3.3K	5%	1/10W
R030	1-216-821-11	METAL CHIP	1K	5%	1/10W
R031	1-216-061-91	RES-CHIP	3.3K	5%	1/10W
R032	1-216-061-91	RES-CHIP	3.3K	5%	1/10W
R033	1-216-073-91	RES-CHIP	10K	5%	1/10W
R034	1-216-119-00	RES-CHIP	820K	5%	1/10W
R035	1-216-101-00	RES-CHIP	150K	5%	1/10W
R036	1-216-073-91	RES-CHIP	10K	5%	1/10W
R039	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R040	1-216-033-00	RES-CHIP	220	5%	1/10W
R041	1-216-025-11	RES-CHIP	100	5%	1/10W
R042	1-216-025-11	RES-CHIP	100	5%	1/10W
R044	1-216-073-91	RES-CHIP	10K	5%	1/10W
R045	1-216-025-11	RES-CHIP	100	5%	1/10W
R046	1-216-025-11	RES-CHIP	100	5%	1/10W
R047	1-216-025-11	RES-CHIP	100	5%	1/10W
R048	1-216-073-91	RES-CHIP	10K	5%	1/10W
R049	1-216-049-11	RES-CHIP	1K	5%	1/10W
R050	1-216-025-11	RES-CHIP	100	5%	1/10W
R051	1-216-295-91	SHORT CHIP	0		
R052	1-216-295-91	SHORT CHIP	0		
R053	1-216-077-91	RES-CHIP	15K	5%	1/10W
R055	1-216-025-11	RES-CHIP	100	5%	1/10W
R056	1-216-081-00	RES-CHIP	22K	5%	1/10W
R060	1-216-025-11	RES-CHIP	100	5%	1/10W
R061	1-216-025-11	RES-CHIP	100	5%	1/10W
R070	1-216-025-11	RES-CHIP	100	5%	1/10W
R071	1-216-049-11	RES-CHIP	1K	5%	1/10W
R072	1-217-715-91	CERAMIC CHIP	0.22UF	10%	16V
R074	1-216-073-91	RES-CHIP	10K	5%	1/10W
R090	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R092	1-216-073-91	RES-CHIP	10K	5%	1/10W
R094	1-216-025-11	RES-CHIP	100	5%	1/10W
R095	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R096	1-216-073-91	RES-CHIP	10K	5%	1/10W
R101	1-216-093-91	RES-CHIP	68K	5%	1/10W
R102	1-216-097-11	RES-CHIP	100K	5%	1/10W
R103	1-216-061-91	RES-CHIP	3.3K	5%	1/10W
R105	1-414-813-11	FERRITE	0UH		
R106	1-215-900-11	METAL OXIDE	22K	5%	2W
R107	1-216-025-11	RES-CHIP	100	5%	1/10W
R108	1-216-025-11	RES-CHIP	100	5%	1/10W
R201	1-216-025-11	RES-CHIP	100	5%	1/10W
R202	1-216-085-91	RES-CHIP	33K	5%	1/10W
R203	1-216-025-11	RES-CHIP	100	5%	1/10W
R211	1-216-081-00	RES-CHIP	22K	5%	1/10W
R212	1-216-069-00	RES-CHIP	6.8K	5%	1/10W
R213	1-216-081-00	RES-CHIP	22K	5%	1/10W
R214	1-216-295-91	SHORT CHIP	0		
R215	1-216-037-00	RES-CHIP	330	5%	1/10W
R216	1-216-097-11	RES-CHIP	100K	5%	1/10W
R217	1-216-073-91	RES-CHIP	10K	5%	1/10W
R220	1-216-017-91	RES-CHIP	47	5%	1/10W
R221	1-216-190-00	RES-CHIP	470	5%	1/8W
R232	1-216-025-11	RES-CHIP	100	5%	1/10W
R233	1-216-069-00	RES-CHIP	6.8K	5%	1/10W
R234	1-216-069-00	RES-CHIP	6.8K	5%	1/10W
R235	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R236	1-216-057-00	RES-CHIP	2.2K	5%	1/10W

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REF.NO.	PART.NO	DESCRIPTION			REMARK
R238	1-216-025-11	RES-CHIP	100	5%	1/10W
R246	1-260-107-11	CARBON	4.7K	5%	1/2W
R248	1-249-429-11	CARBON	10K	5%	1/4W
R249	1-216-097-11	RES-CHIP	100K	5%	1/10W
R250	1-216-081-00	RES-CHIP	22K	5%	1/10W
R251	1-216-069-00	RES-CHIP	6.8K	5%	1/10W
R252	1-216-069-00	RES-CHIP	6.8K	5%	1/10W
R401	1-410-993-42	INDUCTOR	1UH		
R402	1-216-041-00	RES-CHIP	470	5%	1/10W
R403	1-216-113-00	RES-CHIP	470K	5%	1/10W
R404	1-216-113-00	RES-CHIP	470K	5%	1/10W
R405	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R406	1-216-296-11	SHORT CHIP	0		
R407	1-216-022-00	RES-CHIP	75	5%	1/10W
R408	1-216-022-00	RES-CHIP	75	5%	1/10W
R409	1-216-025-11	RES-CHIP	100	5%	1/10W
R410	1-216-025-11	RES-CHIP	100	5%	1/10W
R411	1-216-022-00	RES-CHIP	75	5%	1/10W
R412	1-216-025-11	RES-CHIP	100	5%	1/10W
R413	1-216-113-00	RES-CHIP	470K	5%	1/10W
R414	1-216-022-00	RES-CHIP	75	5%	1/10W
R415	1-216-022-00	RES-CHIP	75	5%	1/10W
R416	1-216-027-00	RES-CHIP	120	5%	1/10W
R417	1-216-113-00	RES-CHIP	470K	5%	1/10W
R418	1-216-113-00	RES-CHIP	470K	5%	1/10W
R419	1-216-022-00	RES-CHIP	75	5%	1/10W
R420	1-216-073-91	RES-CHIP	10K	5%	1/10W
R421	1-216-049-11	RES-CHIP	1K	5%	1/10W
R422	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R423	1-216-113-00	RES-CHIP	470K	5%	1/10W
R424	1-216-113-00	RES-CHIP	470K	5%	1/10W
R425	1-216-085-91	RES-CHIP	33K	5%	1/10W
R426	1-216-073-91	RES-CHIP	10K	5%	1/10W
R427	1-216-113-00	RES-CHIP	470K	5%	1/10W
R428	1-216-073-91	RES-CHIP	10K	5%	1/10W
R429	1-216-089-91	RES-CHIP	47K	5%	1/10W
R430	1-216-073-91	RES-CHIP	10K	5%	1/10W
R431	1-216-073-91	RES-CHIP	10K	5%	1/10W
R433	1-216-073-91	RES-CHIP	10K	5%	1/10W
R434	1-216-073-91	RES-CHIP	10K	5%	1/10W
R435	1-216-295-91	SHORT CHIP	0		
R438	1-216-022-00	RES-CHIP	75	5%	1/10W
R440	1-216-049-11	RES-CHIP	1K	5%	1/10W
R441	1-216-051-00	RES-CHIP	1.2K	5%	1/10W
R442	1-216-085-91	RES-CHIP	33K	5%	1/10W
R443	1-216-073-91	RES-CHIP	10K	5%	1/10W
R444	1-216-061-91	RES-CHIP	3.3K	5%	1/10W
R445	1-216-022-00	RES CHIP	75	5%	1/10W
R446	1-216-113-00	RES-CHIP	470K	5%	1/10W
R447	1-216-295-91	SHORT CHIP	0		

REF.NO.	PART.NO	DESCRIPTION			REMARK
R448	1-216-113-00	RES-CHIP	470K	5%	1/10W
R449	1-216-295-91	SHORT CHIP	0		
R450	1-216-041-00	RES-CHIP	470	5%	1/10W
R451	1-216-041-00	RES-CHIP	470	5%	1/10W
R453	1-216-171-00	RES-CHIP	75	5%	1/8W
R454	1-216-001-00	RES-CHIP	10	5%	1/10W
R455	1-412-002-31	INDUCTOR	4.7UH		
R460	1-216-049-11	RES-CHIP	1K	5%	1/10W
R461	1-216-022-00	RES-CHIP	75	5%	1/10W
R462	1-216-178-00	RES-CHIP	150	5%	1/8W
R500	1-216-061-91	RES-CHIP	3.3K	5%	1/10W
R501	1-216-091-00	RES-CHIP	56K	5%	1/10W
R502	1-216-073-91	RES-CHIP	10K	5%	1/10W
R503	1-215-888-00	METAL OXIDE	220	5%	2W
R504	1-249-385-11	CARBON	2.2	5%	1/4W
R505	1-218-863-11	METAL CHIP	4.7K	0.5%	1/10W
R506	1-216-665-11	METAL CHIP	3.9K	0.5%	1/10W
R507	1-216-349-00	METAL OXIDE	1	5%	1W
R508	1-218-863-11	METAL CHIP	4.7K	0.5%	1/10W
R509	1-216-665-11	METAL CHIP	3.9K	0.5%	1/10W
R510	1-216-113-00	RES-CHIP	470K	5%	1/10W
R512	1-249-382-11	CARBON	1.2	5%	1/4W
R513	1-216-097-11	RES-CHIP	100K	5%	1/10W
R514	1-249-377-11	CARBON	0.47	5%	1/4W
R515	1-249-377-11	CARBON	0.47	5%	1/4W
R516	1-214-907-00	METAL	56K	1%	1/2W
R517	1-215-447-00	METAL	12K	1%	1/4W
R518	1-216-059-00	RES-CHIP	2.7K	5%	1/10W
R520	1-215-884-11	METAL OXIDE	47	5%	2W
R521	1-216-103-00	RES-CHIP	180K	5%	1/10W
R522	1-216-097-11	RES-CHIP	100K	5%	1/10W
R523	1-216-117-00	RES-CHIP	680K	5%	1/10W
R524	1-216-077-91	RES-CHIP	15K	5%	1/10W
R525	1-216-049-11	RES-CHIP	1K	5%	1/10W
R526	1-216-089-91	RES-CHIP	47K	5%	1/10W
R527	1-216-075-00	RES-CHIP	12K	5%	1/10W
R528	1-216-097-11	RES-CHIP	100K	5%	1/10W
R529	1-216-073-91	RES-CHIP	10K	5%	1/10W
R530	1-216-085-91	RES-CHIP	33K	5%	1/10W
R531	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R532	1-216-059-00	RES-CHIP	2.7K	5%	1/10W
R533	1-216-081-00	RES-CHIP	22K	5%	1/10W
R534	1-216-111-00	RES-CHIP	390K	5%	1/10W
R535	1-216-093-91	RES-CHIP	68K	5%	1/10W
R536	1-216-025-11	RES-CHIP	100	5%	1/10W
R538	1-535-143-71	LEAD, JUMPER (7.5MM)			
R539	1-215-892-81	METAL OXIDE	1K	5%	2W
R540	1-212-970-00	FUSIBLE	33	5%	1/2W
R541	1-216-109-00	RES-CHIP	330K	5%	1/10W
R542	1-216-121-11	RES-CHIP	1M	5%	1/10W

Note : The components identified by shading and marked △ are critical for safety. Replace only with the part numbers specified in the parts list.

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REF.NO.		PART.NO	DESCRIPTION			REMARK
R543		1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R544		1-216-103-00	RES-CHIP	180K	5%	1/10W
R546		1-216-479-11	METAL OXIDE	560	5%	3W
R547		1-535-143-71	LEAD, JUMPER (7.5MM)			
R548		1-249-387-11	CARBON	3.3	5%	1/4W
R549		1-216-364-21	METAL OXIDE	0.39	5%	2W
R550		1-215-880-00	METAL OXIDE	10	5%	2W
R551		1-215-867-00	METAL OXIDE	470	5%	1W
R552		1-216-848-11	METAL CHIP	180K	5%	1/10W
R553		1-249-381-11	CARBON	1	5%	1/4W
R555		1-216-089-91	RES-CHIP	47K	5%	1/10W
R556		1-215-915-11	METAL OXIDE	470	5%	3W
R557		1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R559		1-535-303-00	LEAD, JUMPER (5.0MM)			
R561		1-216-117-00	RES-CHIP	680K	5%	1/10W
R562		1-216-099-00	RES-CHIP	120K	5%	1/10W
R563		1-216-097-11	RES-CHIP	100K	5%	1/10W
R565		1-216-033-00	RES-CHIP	220	5%	1/10W
R568		1-215-915-11	METAL OXIDE	470	5%	3W
R569		1-216-073-91	RES-CHIP	10K	5%	1/10W
R570		1-216-049-11	RES-CHIP	1K	5%	1/10W
R571		1-216-035-00	RES-CHIP	270	5%	1/10W
R572		1-216-039-00	RES-CHIP	390	5%	1/10W
R583		1-216-081-00	RES-CHIP	22K	5%	1/10W
R589		1-216-295-91	SHORT CHIP	0		
R591		1-215-892-11	METAL OXIDE	1K	5%	2W
R595		1-249-377-11	CARBON	0.47	5%	1/4W
R600		1-216-037-00	RES-CHIP	330	5%	1/10W
R601		1-218-841-11	METAL CHIP	560	0.5%	1/10W
R603	△	1-202-933-61	FUSIBLE	0.1	10%	1/2W
R605		1-216-049-11	RES-CHIP	1K	5%	1/10W
R608		1-216-073-91	RES-CHIP	10K	5%	1/10W
R609		1-218-873-11	METAL CHIP	12K	0.5%	1/10W
R610		1-215-481-00	METAL	330K	1%	1/4W
R611		1-216-059-00	RES-CHIP	2.7K	5%	1/10W
R612		1-249-429-11	CARBON	10K	5%	1/4W
R613	△	1-219-720-91	METAL	10M	5%	1W
R615		1-215-385-00	METAL	33	1%	1/4W
R616		1-216-101-00	RES-CHIP	150K	5%	1/10W
R617		1-216-099-00	RES-CHIP	120K	5%	1/10W
R619		1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R621		1-216-113-00	RES-CHIP	470K	5%	1/10W
R622		1-216-073-91	RES-CHIP	10K	5%	1/10W
R623		1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R624		1-216-001-00	RES-CHIP	10	5%	1/10W
R625		1-216-073-91	RES-CHIP	10K	5%	1/10W
R627		1-249-389-11	CARBON	4.7	5%	1/4W
R628		1-247-791-91	CARBON	22	5%	1/4W
R629		1-216-073-91	RES-CHIP	10K	5%	1/10W
R632		1-249-417-11	CARBON	1K	5%	1/4W
R633		1-215-481-00	METAL	330K	1%	1/4W
R634		1-217-625-00	METAL	0.05	10%	2W
R635		1-260-300-11	CARBON	4.7	5%	1/2W
R636		1-249-413-11	CARBON	470	5%	1/4W
R637		1-216-041-00	RES-CHIP	470	5%	1/10W
R639		1-208-814-91	METAL CHIP	22K	0.5%	1/10W
R640		1-208-830-11	METAL CHIP	100K	0.5%	1/10W
R641		1-216-097-11	RES-CHIP	100K	5%	1/10W
R642		1-249-405-11	CARBON	100	5%	1/4W
R643		1-216-089-91	RES-CHIP	47K	5%	1/10W
R645		1-216-073-91	RES-CHIP	10K	5%	1/10W
R647		1-216-049-11	RES-CHIP	1K	5%	1/10W
R648		1-215-481-00	METAL	330K	1%	1/4W
R649		1-208-805-11	METAL CHIP	9.1K	0.5%	1/10W
R650		1-208-758-11	METAL CHIP	100	0.5%	1/10W
R651	△	1-220-926-11	FUSIBLE	0.47	10%	1/2W
R654		1-216-001-00	RES-CHIP	10	5%	1/10W
R656		1-216-365-00	METAL OXIDE	0.47	5%	2W
R660		1-247-807-31	CARBON	100	5%	1/4W
R1202		1-216-073-91	RES-CHIP	10K	5%	1/10W
R1207		1-216-077-91	RES-CHIP	15K	5%	1/10W
R1210		1-216-077-91	RES-CHIP	15K	5%	1/10W
R1213		1-216-049-11	RES-CHIP	1K	5%	1/10W
R1214		1-216-049-11	RES-CHIP	1K	5%	1/10W
R1215		1-216-049-11	RES-CHIP	1K	5%	1/10W
R1216		1-216-025-11	RES-CHIP	100	5%	1/10W
R1217		1-216-341-11	METAL OXIDE	0.22	5%	1W
R1230		1-216-041-00	RES-CHIP	470	5%	1/10W
R1231		1-216-113-00	RES-CHIP	470K	5%	1/10W
R1232		1-216-041-00	RES-CHIP	470	5%	1/10W
R1233		1-216-113-00	RES-CHIP	470K	5%	1/10W
R1235		1-216-073-91	RES-CHIP	10K	5%	1/10W
R1236		1-216-073-91	RES-CHIP	10K	5%	1/10W

< RELAY >

RY601	△	1-755-388-11	RELAY (AC POWER)	

< SWITCH >

SW532		1-572-707-11	SWITCH, LEVER	

< TRANSFORMER >

T511	△	8-598-834-50	TRANSFORMER ASSY FLYBACK NX-4521//Z2B4	
T531		1-437-210-11	TRANSFORMER, HORIZONTAL DRIVE	
T532		1-426-981-91	TRANSFORMER, FERRITE (PMT)	
T533		1-435-346-11	TRANSFORMER, HORIZONTAL LINEAR	
T601	△	1-428-896-11	COIL, LINE FILTER	
T602	△	1-431-732-31	TRANSFORMER, CONVERTER (SRT)	
T603	△	1-435-977-11	TRANSFORMER, CONVERTER (PIT)	

Note : The components identified by shading and marked ⚠ are critical for safety. Replace only with the part numbers specified in the parts list.

A F2 C

REF.NO.	PART.NO	DESCRIPTION	REMARK
	< THERMISTOR >		
TH601	1-803-586-41	THERMISTOR	
THP601 ⚠	1-803-951-11	THERMISTOR, PTC	
	< CRYSTAL >		
X001	1-578-774-71	VIBRATOR, CRYSTAL	
X201	1-760-628-11	VIBRATOR, CRYSTAL	
A Board Variant Parts KV-29LS40B			
	< TUNER >		
TU101	8-598-535-20	FRONTEND BTF-EF411	
A Board Variant Parts KV-29LS40E/KV-29LS40K			
	< TUNER >		
TU101	8-598-533-10	FRONTEND BTF-EC411	
*** A-1624-104-A F2 Board Complete**			
	4-206-220-01	HOLDER, LED	
	< CAPACITOR >		
C2601	1-113-924-11	CERAMIC 0.0047UF	20.00% 250V
C2901	1-126-964-11	ELECT 10UF	20.00% 50V
C2902	1-104-665-11	ELECT 100UF	20.00% 25V
	< CONNECTOR >		
CN2601 ⚠	* 1-580-844-11	PIN, CONNECTOR (POWER)	
CN2602	1-695-915-11	TAB (CONTACT)	
CN2603 ⚠	* 1-695-292-11	PIN, CONNECTOR (POWER)	
CN2901	* 1-564-510-11	PLUG, CONNECTOR 7P	
	< DIODE >		
D2901	8-719-923-60	DIODE MTZJ-T-77-9.1A	
D2902	8-719-923-60	DIODE MTZJ-T-77-9.1A	
D2903	8-719-302-45	DIODE SEL1210S-D	
	< FUSE >		
F2601 ⚠	1-576-232-21	FUSE (H.B.C.) 5A/250V	
FH2601 ⚠	1-533-725-11	FUSE HOLDER 0A 0V	
	< IC >		
IC2901	8-742-180-30	HYB IC SBX3081-51(30)	
	< RESISTOR >		
R2601 ⚠	1-202-719-00	SOLID 1M 10% 1/2W	
R2901	1-249-401-11	CARBON 47 5% 1/4W	
R2902	1-247-807-31	CARBON 100 5% 1/4W	

REF.NO.	PART.NO	DESCRIPTION	REMARK
	< SWITCH >		
S2601 ⚠	1-571-433-21	SWITCH, PUSH (AC POWER)	
	< VARISTOR >		
VDR2601 ⚠	1-804-995-11	VARISTOR	
*** A-1639-019-A C Board Complete**			
	4-382-854-01	SCREW (M3X8), P, SW (+)	
	< CAPACITOR >		
C701	1-136-189-00	MYLAR 0.1UF	10.00% 250V
C702	1-126-964-11	ELECT 10UF	20.00% 50V
C703	1-101-004-00	CERAMIC 0.01UF	50V
C704	1-107-649-11	ELECT 2.2UF	20.00% 250V
C705	1-162-318-11	CERAMIC 0.001UF	10.00% 500V
C706	1-162-318-11	CERAMIC 0.001UF	10.00% 500V
C708	1-115-350-51	CERAMIC 0.0047UF	2KV
C710	1-107-652-11	ELECT 10UF	20.00% 250V
C1803	1-101-005-00	CERAMIC 0.022UF	50V
C1804	1-126-964-11	ELECT 10UF	20.00% 50V
C1805	1-101-880-00	CERAMIC 47PF	5.00% 50V
	< CONNECTOR >		
CN702	1-695-915-11	TAB (CONTACT)	
CN703	* 1-816-978-51	PLUG, CONNECTOR 7P	
CN706	1-695-915-11	TAB (CONTACT)	
CN707	* 1-816-976-51	PLUG, CONNECTOR 5P	
CN1801	* 1-816-974-51	PLUG, CONNECTOR 3P	
	< DIODE >		
D701	8-719-991-33	DIODE 1SS133T-77	
D702	8-719-901-83	DIODE 1SS83	
D703	8-719-302-43	DIODE EL1Z	
D705	8-719-302-43	DIODE EL1Z	
D706	8-719-901-83	DIODE 1SS83	
D707	8-719-901-83	DIODE 1SS83	
D708	8-719-109-97	DIODE RD6.8ESB2	
D709	8-719-109-97	DIODE RD6.8ESB2	
D710	8-719-109-97	DIODE RD6.8ESB2	
D1801	8-719-110-17	DIODE RD10ESB2	
D1802	8-719-110-17	DIODE RD10ESB2	
D1803	8-719-110-17	DIODE RD10ESB2	
	< IC >		
IC701	8-759-562-43	IC TDA6108JF/N1B	
IC1801	8-759-603-37	IC M5216P	

Note : The components identified by shading and marked ⚠ are critical for safety. Replace only with the part numbers specified in the parts list.

C VM

REF.NO.	PART.NO	DESCRIPTION			REMARK
		< SOCKET >			
J701	⚠ 1-251-732-11	SOCKET, CRT			
		< COIL >			
L704	1-414-183-41	INDUCTOR	10UH		
		< RESISTOR >			
R701	1-247-903-00	CARBON	1M	5%	1/4W
R702	1-249-429-11	CARBON	10K	5%	1/4W
R703	1-247-903-00	CARBON	1M	5%	1/4W
R704	1-535-143-31	LEAD, JUMPER (15.0MM)			
R705	1-215-869-11	METAL OXIDE	1K	5%	1W
R706	1-249-411-11	CARBON	330	5%	1/4W
R712	1-215-869-11	METAL OXIDE	1K	5%	1W
R716	1-249-411-11	CARBON	330	5%	1/4W
R718	1-202-814-11	SOLID	33K	10%	1/2W
R726	1-215-869-11	METAL OXIDE	1K	5%	1W
R727	1-249-411-11	CARBON	330	5%	1/4W
R728	1-249-398-11	CARBON	27	5%	1/4W
R741	1-202-549-00	SOLID	100	20%	1/2W
R1801	1-249-441-11	CARBON	100K	5%	1/4W
R1805	1-249-429-11	CARBON	10K	5%	1/4W
R1806	1-247-899-11	CARBON	680K	5%	1/4W
R1807	1-249-429-11	CARBON	10K	5%	1/4W
R1808	1-249-429-11	CARBON	10K	5%	1/4W
R1809	1-249-429-11	CARBON	10K	5%	1/4W
R1810	1-249-429-11	CARBON	10K	5%	1/4W
		< RESISTOR VARIABLE >			
RV702	1-241-656-11	RES, ADJ, METAL FILM 110M			

* A-1645-045-A VM Board Complete

	1-900-903-72	LEAD ASSY, FOCUS			
		< CAPACITOR >			
C1701	1-104-665-11	ELECT	100UF	20.00%	25V
C1704	1-104-665-11	ELECT	100UF	20.00%	25V
C1732	1-216-295-91	SHORT CHIP	0		
C1844	1-129-716-00	FILM	0.015UF	5.00%	630V
C1845	1-129-725-00	FILM	0.082UF	5.00%	400V
C1848	1-136-347-11	FILM	0.0047UF	5.00%	630V
C1901	1-162-927-11	CERAMIC CHIP	100PF	5.00%	50V
C1902	1-137-374-11	MYLAR	0.047UF	5.00%	50V
C1903	1-126-964-11	ELECT	10UF	20.00%	50V
C1904	1-130-475-00	MYLAR	0.0022UF	5.00%	50V
C1905	1-137-374-11	MYLAR	0.047UF	5.00%	50V
C1906	1-162-970-11	CERAMIC CHIP	0.01UF	10.00%	25V
C1908	1-109-954-11	ELECT	0.47UF	20.00%	160V
C1911	1-109-954-11	ELECT	0.47UF	20.00%	160V
C1913	1-129-992-00	FILM	0.0024UF	5.00%	630V
C1914	1-102-244-00	CERAMIC	220PF	10.00%	500V
C1915	1-136-205-11	MYLAR	0.022UF	5.00%	630V
C1916	1-162-962-11	CERAMIC CHIP	470PF	10.00%	50V
C1917	1-102-228-00	CERAMIC	470PF	10.00%	500V
C1951	1-126-964-11	ELECT	10UF	20.00%	50V
C1952	1-126-964-11	ELECT	10UF	20.00%	50V
C1953	1-137-367-11	MYLAR	0.0033UF	5.00%	50V
C1954	1-162-970-11	CERAMIC CHIP	0.01UF	10.00%	25V
C1957	1-126-964-11	ELECT	10UF	20.00%	50V
C1958	1-136-169-00	FILM	0.22UF	5.00%	50V
C1959	1-136-169-00	FILM	0.22UF	5.00%	50V
		< CONNECTOR >			
CN1701	1-691-771-11	PLUG (MICRO CONNECTOR) 9P			
CN1718	* 1-770-723-11	CONNECTOR, BOARD TO BOARD 8P			
		< DIODE >			
D1840	8-719-302-43	DIODE EL1Z			
D1901	8-719-991-33	DIODE 1SS133T-77			
D1902	8-719-991-33	DIODE 1SS133T-77			
D1903	8-719-991-33	DIODE 1SS133T-77			
D1904	8-719-991-33	DIODE 1SS133T-77			
D1905	8-719-110-41	DIODE RD15ESB2			
D1906	6-500-105-01	DIODE ER106T/B			
D1907	6-500-105-01	DIODE ER106T/B			
D1908	6-500-126-01	DIODE UF106GT/B			
D1909	8-719-991-33	DIODE 1SS133T-77			
		< FERRITE BEAD >			
FB1701	1-535-303-00	LEAD, JUMPER (5.0MM)			
		< IC >			
IC1701	8-759-394-36	IC BA09T			
IC1901	6-705-209-01	IC LM393N			
IC1902	6-701-625-01	IC LM358N			
		< COIL >			
L1701	1-414-183-41	INDUCTOR	10UH		
L1843	1-406-989-21	INDUCTOR	10MH		
L1901	1-406-677-11	INDUCTOR	10MH		
L1902	1-414-177-11	INDUCTOR	1UH		
L1959	1-406-679-11	INDUCTOR	22MH		
		< TRANSISTOR >			
Q1840	8-729-119-76	TRANSISTOR 2SA1175-HFE			
Q1841	8-729-926-76	TRANSISTOR IRF620			
Q1901	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R			
Q1902	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R			

REF.NO.	PART.NO	DESCRIPTION			REMARK
Q1903	8-729-043-95	TRANSISTOR 2SC3840(3)			
Q1906	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R			
Q1907	8-729-140-97	TRANSISTOR 2SB734-34			
		< RESISTOR >			
R1842	1-216-025-11	RES-CHIP	100	5%	1/10W
R1846	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R1847	1-216-452-11	METAL OXIDE	180	5%	2W
R1848	1-215-886-11	METAL OXIDE	100	5%	2W
R1903	1-216-073-91	RES-CHIP	10K	5%	1/10W
R1904	1-216-073-91	RES-CHIP	10K	5%	1/10W
R1905	1-216-097-11	RES-CHIP	100K	5%	1/10W
R1906	1-216-073-91	RES-CHIP	10K	5%	1/10W
R1907	1-216-097-11	RES-CHIP	100K	5%	1/10W
R1908	1-216-033-00	RES-CHIP	220	5%	1/10W
R1909	1-215-489-00	METAL	680K	1%	1/4W
R1910	1-216-295-91	SHORT CHIP	0		
R1911	1-216-073-91	RES-CHIP	10K	5%	1/10W
R1912	1-216-121-11	RES-CHIP	1M	5%	1/10W
R1913	1-216-049-11	RES-CHIP	1K	5%	1/10W
R1914	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R1915	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R1916	1-216-667-11	METAL CHIP	4.7K	0.5%	1/10W
R1917	1-218-889-11	METAL CHIP	56K	0.5%	1/10W
R1918	1-215-922-11	METAL OXIDE	6.8K	5%	3W
R1919	1-218-871-11	METAL CHIP	10K	0.5%	1/10W
R1920	1-216-295-91	SHORT CHIP	0		
R1921	1-215-922-11	METAL OXIDE	6.8K	5%	3W
R1922	1-215-919-11	METAL OXIDE	2.2K	5%	3W
R1923	1-216-097-11	RES-CHIP	100K	5%	1/10W
R1924	1-216-097-11	RES-CHIP	100K	5%	1/10W
R1925	1-216-097-11	RES-CHIP	100K	5%	1/10W
R1926	1-216-295-91	SHORT CHIP	0		
R1931	1-218-887-11	METAL CHIP	47K	0.5%	1/10W
R1953	1-216-107-00	RES-CHIP	270K	5%	1/10W
R1954	1-216-109-00	RES-CHIP	330K	5%	1/10W
R1955	1-216-105-91	RES-CHIP	220K	5%	1/10W
R1956	1-218-463-11	RES-CHIP	8.2M	5%	1/10W
R1957	1-216-073-91	RES-CHIP	10K	5%	1/10W
R1958	1-216-025-11	RES-CHIP	100	5%	1/10W
R1959	1-216-063-91	RES-CHIP	3.9K	5%	1/10W
R1960	1-216-073-91	RES-CHIP	10K	5%	1/10W
R1961	1-218-883-11	METAL CHIP	33K	0.5%	1/10W
R1962	1-218-883-11	METAL CHIP	33K	0.5%	1/10W
R1964	1-216-025-11	RES-CHIP	100	5%	1/10W
R1965	1-216-041-00	RES-CHIP	470	5%	1/10W
R1966	1-215-886-11	METAL OXIDE	100	5%	2W
R1967	1-215-897-11	METAL OXIDE	6.8K	5%	2W
R1968	1-215-886-11	METAL OXIDE	100	5%	2W
R1969	1-216-461-00	METAL OXIDE	5.6K	5%	2W

REF.NO.	PART.NO	DESCRIPTION			REMARK
		< TRANSFORMER >			
T1901	1-437-837-11	FERRITE TRANSFORMER (DFT)			
		*** A-1646-239-A H2 Board Complete**			
		< CAPACITOR >			
C906	1-126-960-11	ELECT	1UF		20.00% 50V
C907	1-126-960-11	ELECT	1UF		20.00% 50V
		< CONNECTOR >			
CN906	* 1-564-524-11	PLUG, CONNECTOR 9P			
CN908	* 1-564-521-11	PLUG, CONNECTOR 6P			
		< DIODE >			
D902	8-719-929-15	DIODE HZS9.1NB2			
D903	8-719-929-15	DIODE HZS9.1NB2			
D904	8-719-109-97	DIODE RD6.8ESB2			
D905	8-719-109-97	DIODE RD6.8ESB2			
D908	8-719-923-60	DIODE MTZJ-T-77-9.1A			
		< SOCKET >			
J900	1-750-264-11	JACK			
J901	1-779-947-11	TERMINAL BLOCK, S			
		< COIL >			
L900	1-535-303-00	LEAD, JUMPER (5.0MM)			
L901	1-535-303-00	LEAD, JUMPER (5.0MM)			
L902	1-535-303-00	LEAD, JUMPER (5.0MM)			
L903	1-535-303-00	LEAD, JUMPER (5.0MM)			
L904	1-410-119-11	INDUCTOR	1MH		
		< RESISTOR >			
R901	1-249-427-11	CARBON	6.8K	5%	1/4W
R902	1-249-429-11	CARBON	10K	5%	1/4W
R903	1-249-406-11	CARBON	120	5%	1/4W
R904	1-249-406-11	CARBON	120	5%	1/4W
R909	1-247-895-91	CARBON	470K	5%	1/4W
R910	1-247-895-91	CARBON	470K	5%	1/4W
R911	1-249-419-11	CARBON	1.5K	5%	1/4W
R912	1-535-303-00	LEAD, JUMPER (5.0MM)			
R913	1-247-843-11	CARBON	3.3K	5%	1/4W
R914	1-249-431-11	CARBON	15K	5%	1/4W
R915	1-249-406-11	CARBON	120	5%	1/4W
R916	1-249-406-11	CARBON	120	5%	1/4W
R917	1-247-807-31	CARBON	100	5%	1/4W
R918	1-247-807-31	CARBON	100	5%	1/4W
		< SWITCH >			
S900	1-692-979-11	SWITCH, TACTILE			
S901	1-692-979-11	SWITCH, TACTILE			
S902	1-692-979-11	SWITCH, TACTILE			

Note : The components identified by shading and marked ⚠ are critical for safety. Replace only with the part numbers specified in the parts list.

REF.NO.	PART.NO	DESCRIPTION	REMARK

MISCELLANEOUS

⚠	1-571-433-21	SWITCH, PUSH (AC POWER)	
	1-424-733-11	COIL, PFC CHOKE 65MMH	
⚠	1-765-286-11	CORD, POWER	
	8-598-535-20	FRONTEND BTF-EF411 (KV-29LS40B)	
	8-598-533-10	FRONTEND BTF-EC411 (KV-29LS40E/K)	
⚠	1-453-308-51	TRANSFORMER ASSY, FLYBACK (NX-4521//Z2B4)	
	1-529-408-11	SPEAKER (4.2X24CM)	
⚠	8-451-494-31	DEFLECTION YOKE (Y29RSA-S)	
⚠	8-453-011-11	NECK ASSY, NA299-M	
	1-452-896-11	COIL, NA ROTATION (RT-200)	
⚠	1-416-654-21	COIL, DEMAGNETIC	
⚠	1-251-537-22	CAP ASSY, HIGH-VOLTAGE	
⚠	8-735-169-05	PICTURE TUBE (M68LNH060X)	
	1-452-094-00	MAGNET ROTATABLE DISK; 15MM Ø	
	1-425-032-00	MAGNET, DISK; 10MM Ø	

ACCESSORIES AND PACKAGING MATERIALS

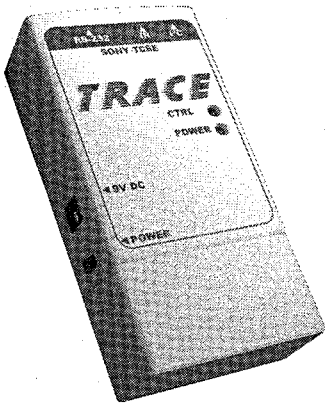
*4-205-942-01	INDIVIDUAL CARTON	
4-029-168-01	BAG, PROTECTION	
4-103-269-11	INSTRUCTION MANUAL (KV-29LS40E) (TURKISH/GERMAN/GREEK)	
4-103-269-21	INSTRUCTION MANUAL (KV-29LS40E) (ITALIAN)	
4-103-269-31	INSTRUCTION MANUAL (KV-29LS40E) (FINNISH/PORTUGUESE/SPANISH/NORWEGIAN/SWEDISH/DANISH)	
4-103-269-41	INSTRUCTION MANUAL (KV-29LS40B) (DUTCH/FRENCH/ITALIAN/GERMAN)	
4-103-269-51	INSTRUCTION MANUAL (KV-29LS40K) (BULGARIAN/ENGLISH/POLISH/RUSSIAN/CZECH/HUNGARIAN)	

REMOTE COMMANDER

1-478-614-11	REMOTE COMMANDER (RM-947)	

TRACE

A new TV Repair Assistance Tool that combines ease of use and powerful PC software tools to allow you to save valuable time during many TV repairs.



The TRACE interface connects to the PC's serial port. It provides connection to the TV's I^2C bus and can be provided with an InfraRed transmitter (optional).

The interface is powered by a standard 9 V PP3 battery for portable use, and can also be powered by an external 9V/25mA DC power supply.

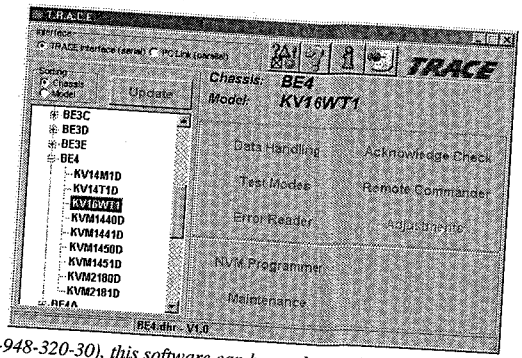
The TRACE software that is supplied with the interface allows you to:

- Read, restore and compare NVM contents via the I^2C bus
- Acknowledge check of all I^2C devices in the TV set
- Read Error Codes (emulation of the Error Reader tool)

With the optional IR Add-on kit, the following features can be added:

- Remote Commander emulation
- User programmable Functional Check through Infrared
- Fast and documented Test Mode setting of all Sony TV chassis

Additional features such as Adjustments and Troubleshooting are available in chassis-dependent software modules. Please contact your local Sony Service organisation for the latest information.



Note: For workshops already using the existing I^2C Link parallel port interface (9-948-320-30), this software can be used as well, replacing the TV Data Handling software (9-948-340-50), but Error Reader and IR functions can only be accessed with the TRACE interface.

Partnumbers: TRACE Starter Kit (TRACE interface + software): 9-948-320-70
TRACE Software (for users of the I^2C Link interface): 9-948-340-80
TRACE IR Add-on (IR interface + Remote Commander software): 9-948-320-80

PC requirements: IBM-compatible PC with operating system Windows95, Windows98, or WindowsNT*.

* WindowsNT only supported with TRACE interface

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Sony UK
Service Promotions Dept.

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